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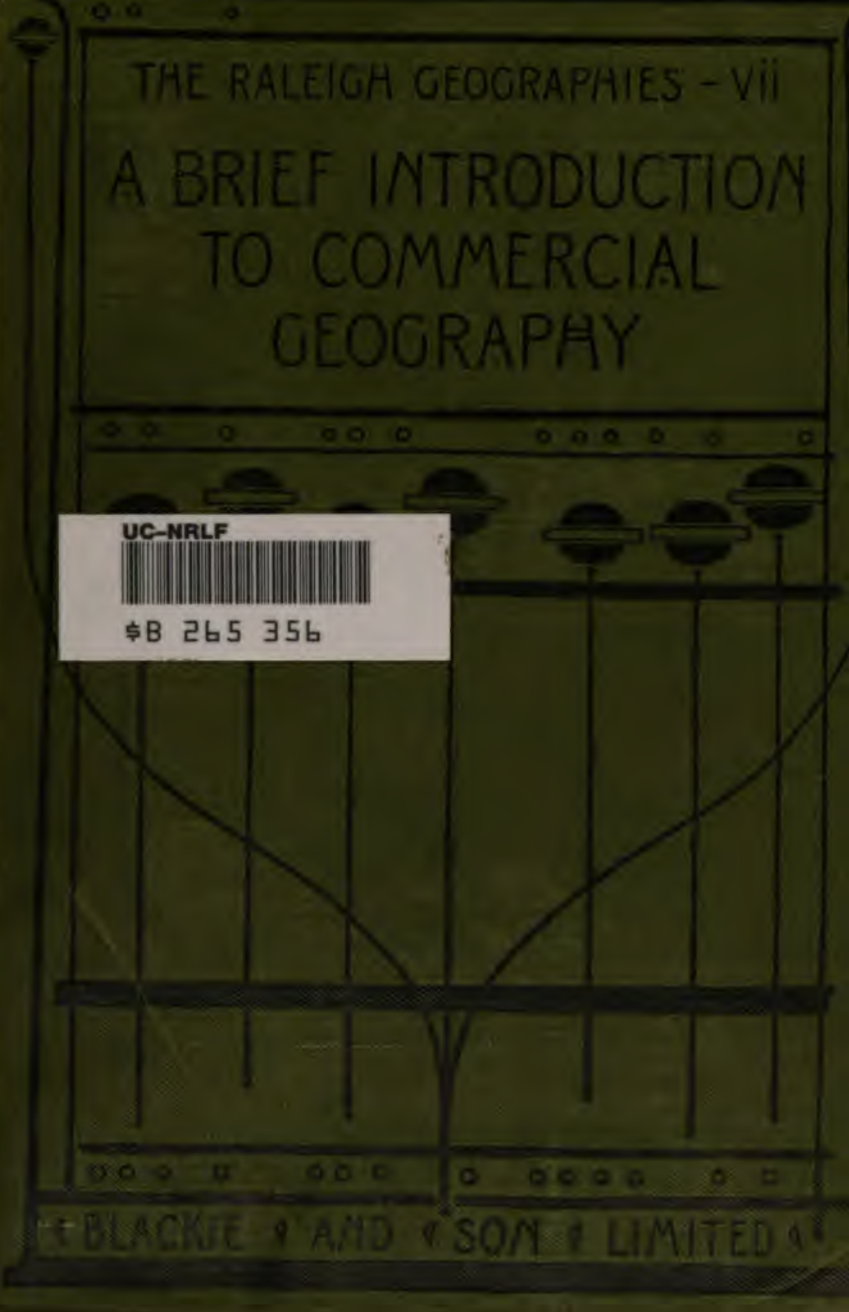

THE RALEIGH GEOGRAPHIES - VII

A BRIEF INTRODUCTION TO COMMERCIAL GEOGRAPHY

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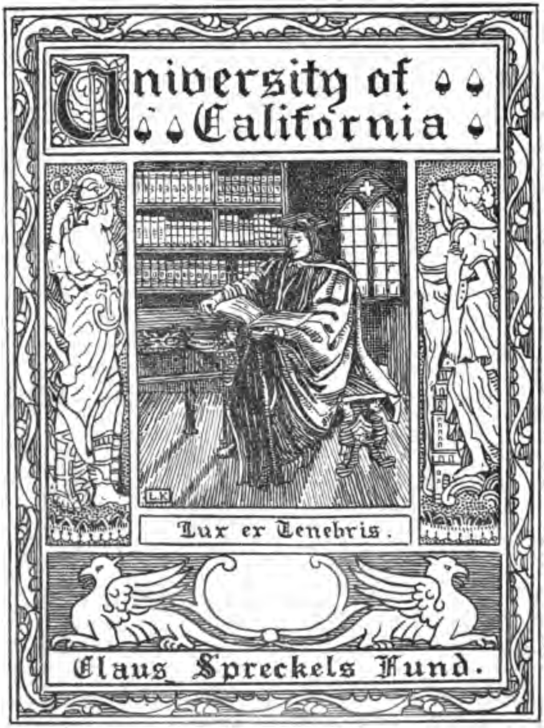
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THE RALEIGH GEOGRAPHIES—VII

A Brief Introduction
to
Commercial Geography

BEING

A HANDBOOK OF THE
COMMERCIAL RELATIONSHIPS OF GREAT BRITAIN
THE COLONIES AND THE UNITED STATES

BY

THE REV. FREDERICK SMITH
FORMERLY SCIENCE MASTER, DOLLAR ACADEMY

LONDON
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GLASGOW AND DUBLIN
1903

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PREFACE

In this little book, which is intended entirely as an introduction to a great subject, the technical terms of commerce have been carefully avoided. What has been aimed at is a readable and broadly suggestive account of the present conditions and the future possibilities of the commerce of our great empire, rather than a statistical statement, in which the grander and more inspiring apprehension of the vast movements of commerce would have been lost.

In confining the attention to the commerce of the British Empire and the United States, it was felt that greater clearness and point would be given to the exposition of principles, than if more had been attempted. The British Empire and the United States are the chief commercial countries of the world. We, as a nation, do a larger business with the United States than with any other country; and, as part of the great Anglo-Saxon trading community, the United States is in commerce, as in blood, closely knit to the Mother Country and her colonies properly so called.

In the Appendix, a summary of the lessons is given, and a detailed commercial geography of the British Empire and the United States. To this there is added a list of some of the principal commodities of commerce, with a statement of the countries which export these commodities and also of the countries which import them.

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THE COMMERCE OF THE EMPIRE

ON TRADE AND PRODUCTIONS

1. A TOWN MARKET

Among the things upon which the welfare of a nation depends, trade, perhaps, stands first. From trade comes prosperity, comfort, and wealth, and with these position and power among the nations of the world.

We are beginning to understand the importance of trade, not only as between city and city at home, but as between country and country the wide world over. It is seen that every nation which would advance its prosperity and power, or even hold its own in the great march of civilization, must not only *maintain* its commerce, but must *extend it* at home and in foreign countries wherever a market can be found. Thus the life and vigour of the world itself are to-day dependent upon commerce.

If we study the world in its relation to man as a trader, if we consider the exchange of goods, the place and manner of their production, the means of transport, and the routes by which they are carried, we are studying *Commercial Geography*, the subject of this book.

We can understand *why* we trade by watching what goes on at any town on a market-day. There we may observe that the people from the surrounding country have brought in all sorts of produce. Farmers have brought in grain, pulse, hay, straw, potatoes, turnips, carrots, oxen, sheep, pigs, wool, &c.; while their wives or servants or cottagers display poultry, butter, cheese, eggs, honey, fruit, and vegetables. If, when these country people were returning to their homes again, we could have asked them a question or two, we should have learned that, after having sold what may be called their *home-produce*, they had purchased from the shopkeepers of the town such things as they wanted but do not grow or make for themselves.

These would be clothing, boots and shoes, tools, ironware; tea, sugar, raisins, currants, spices; and various other manufactured and imported articles.

Just as the country people sell in the market-town, and buy there what they want, so a nation sells its own produce to other nations, and buys from them such things as the other nations can supply. And as it is important for the country people to get in exchange things which they themselves do not produce, it is equally important for a nation to get in trade with other parts of the world things which it neither grows nor manufactures for itself.

This buying and selling between the people of the country and those of the town is a sort of object-lesson, showing us on a small scale a picture of the great commerce which goes on between nation and nation.

2. A NATION'S MARKET

No nation can trade with another unless it has something to exchange. It must be industrious, and produce something in greater abundance than it needs for itself. This then it can exchange for some other useful article, of which another nation finds itself able to produce more than it requires for its own use. Our country folk reap more corn, grow more fruit, feed more cattle, make more butter and cheese, than they require for themselves, and so they have spare produce to sell.

In like manner, if a nation is sufficiently industrious it will produce many things in greater abundance than it can itself consume, and these it will wish to exchange for other things which it cannot produce so profitably. It may have over-abundance of coal and iron or of other minerals, of corn or fruit or wine, of cattle or of fish. It may have manufactured wares, such as machinery and railway-engines, or woollen or cotton goods. Whatever the goods may be, there must be something to sell if trade is to exist.

For its superfluous products the nation must seek a market, just as the country folk do when they take their goods to the town. It must get its superabundant products carried to other lands where there is need of them. The place where goods can thus be sold and bought it is common to call *a market*.

But before any country can be a market, that country must itself have goods to sell. It must either dig minerals or precious stones, or fell timber, or collect the skins of beasts; or it must gather vegetable products, such as gums, fruits, seeds; or produce by cultivation corn, rice, sugar, tea, coffee, or others of the multitude of things of commercial value. Then it will be able to make exchange with, or to pay for in money, the different things which are brought to it.

The trade which we carry on with foreign nations we call our "foreign trade"; the trade between town and town, and between town and country within our land, we call our "home trade". A nation which has no foreign trade is of necessity limited in its food and clothing to its home productions. If this were the case with us in the British Isles, we should neither have sufficient food nor sufficient clothing; and many things which are now considered to be almost necessaries, we should never see. But through the agency of foreign trade many things which we do not ourselves produce are brought to our door.

3. MAN IN NATURE'S WORKSHOP—WHAT HE TRADES WITH

All things possessed by man are either altered or unaltered natural products. Gold, jewels, clothes, furniture, the houses we live in, and everything which we use as food, whether we consider them "necessaries" or "luxuries", have been produced directly or indirectly from Nature. We cannot conceive, and therefore cannot mention, a single thing which has not come from either the Mineral or the Vegetable or the Animal Kingdom.

The mineral masses of the world, that is its rocks, have in their decay become the soils. The soils and the atmosphere are the support of vegetable life, and vegetation is the great food supply of the Animal Kingdom.

We cannot truly *make* anything. We can only take things as they are presented to us by the hands of Nature—metals, grain, fruits, fishes, birds, and beasts, and use them in the forms in which they are received, or modify them, that is, alter their forms to suit circumstances and demand. That is all we can do: out of what is called "raw" materials we can manufacture goods and prepare food; and herein lie for every intelligent nation wonderful possibilities. The world is actually a great exhaustless storehouse of material which man, by using his intelligence and his energy in working with and assisting Nature, can form into those things which are most serviceable to himself.

The nation which learns best how to use the marvellous and exhaustless gifts of Nature, which learns best how to deal with its mineral wealth, which finds out how to make useful tools and machines, which is patient in discovering what is best in all the conditions of its ploughing and sowing and reaping, which tries by all means in its power to improve its cattle and sheep and other domestic animals, such a nation is likely to prosper, and to take a leading place among the peoples of the world.

One of the greatest civilizing forces which man possesses is the knowledge that when he cultivates the soil, that when he cares for his cattle, that when he digs in the earth for the useful metals, he is not working as a slave but as a master. He knows that when he studies and examines and compares as he works, he will be able to make Nature do yet more and more at his bidding. So he is the master in the great workshop of Nature.

Uncivilized man has not learned this great lesson. The savage is savage because he does not know how to work, never having seen the importance of it. He therefore remains little better than a thoughtless, half-fed, half-clothed animal, while the richest soil may be under his feet, and gold, rubies, diamonds, or other mineral wealth all about him. He cannot use his opportunities, because he has never used his intelligence and his energy sufficiently to learn what production and trading mean. On the other hand, civilized man is civilized because he has used his intelligence in the production of useful things; and as he succeeds in production, he seeks to exchange his productions with his neighbours, and so becomes a trader as well as a producer.

4. CLIMATE.—I

As trade is the dealing in the natural productions of the world, and in the vast multitude of things which men make out of the materials which the earth yields, it is important that we should try to understand some of the natural conditions under which these things are produced. One of the most important of these natural conditions is *Climate*, and if we know the particular sort of climate that prevails in a country we know a good deal as to its probable productions.

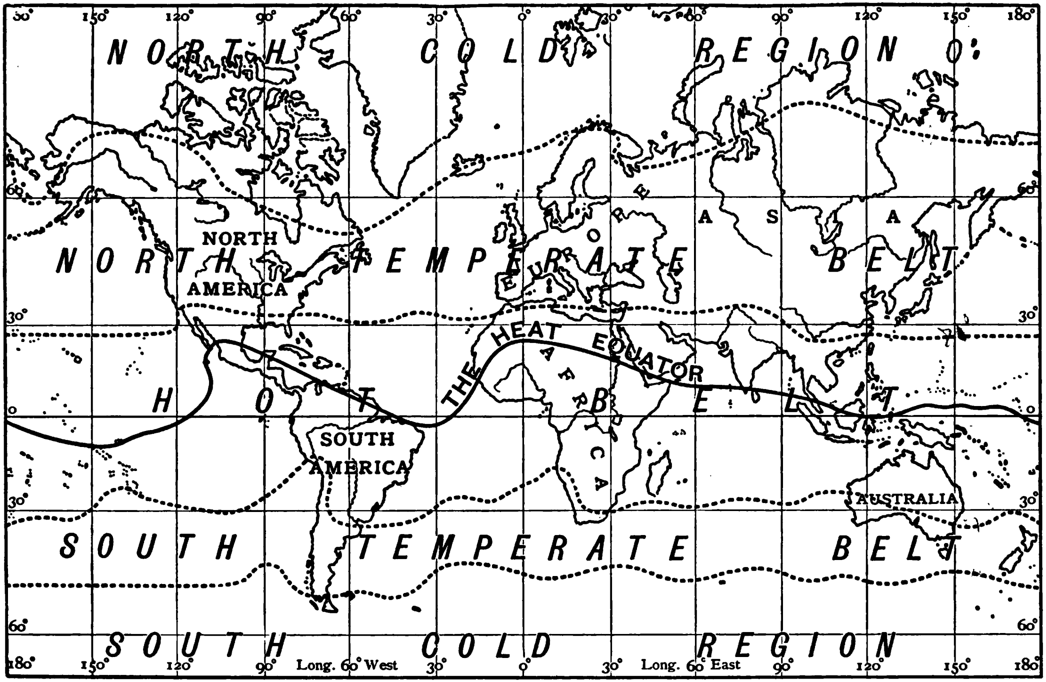
By the climate of a country is to be understood the general character of its weather, and this includes heat and cold, the force of the winds, the dampness of the atmosphere, the quantity of rain, &c. Weather in any locality changes, as we know, day by day; and in almost every mentionable country in the world the climate is more or less different from that in every other.

This great variation in the climate of the world is brought about by natural conditions and circumstances. Chief among these is the position of the different parts of the earth's surface in relation to the sun, in consequence of which some parts of its surface are much warmer than other parts. If, as an illustration, we suppose a dozen people to be sitting round a fire in a room, those directly in front of the fire receive more heat from it than those on either hand nearer the sides of the fireplace, while those well to the side scarcely feel the heat at all.

It is just so with the earth in regard to the sun. The sun is the great fire which lights and heats the earth. But, as the earth is a globe in shape, that part of it which is exactly opposite the sun receives more light and heat from it than other parts. The part of the earth which is directly opposite the sun is that which is midway between the north and south poles, namely, at the equator. The equatorial region therefore receives more direct heat than any other part. As we pass from the equatorial region either to the north or to the south, we come into parts getting cooler and cooler. Away from the equator the sun's rays fall more and more in a slanting direction, instead of, as at the equator, falling from straight overhead; and as we pass from the equator we are like the people passing from the front to the sides of the fireplace.

To mark this difference in the effect of the sun's heat upon the world on the different parts of the earth's surface, geographers have laid off the whole surface of the globe into five great *zones*. Thus the great band lying on both sides of the equator is called the *torrid* zone or *hot* belt. And north and south of this, one in each hemisphere, are the *temperate* zones or *mild* belts. While yet farther north and farther south, that is to say, between the temperate zones and the poles, lie the *frigid* zones or *cold* caps.

Speaking generally, the plants and animals of the world may be said to be distributed over it according to the temperature of the different regions. Some plants and animals depend so much upon heat that they are unable to live outside the torrid zone except


NORTH COLD REGION
NORTH TEMPERATE BELT
HOT BELT
SOUTH TEMPERATE BELT
SOUTH COLD REGION
THE HEAT EQUATOR
NORTH AMERICA
SOUTH AMERICA
EUROPE
ASIA
AFRICA
AUSTRALIA
180°
150°
120°
90°
60°
30°
0°
30°
60°
90°
120°
150°
180°
Long. 60° West
Long. 60° East

in "hothouses" and heated rooms, and are therefore known as *tropical* plants and animals. Some plants and animals are confined to the temperate zones: they do not like extremes of heat or cold. Others, again, seem not only to bear but to love the cold regions of the frigid zones, where ice and snow prevail during the greater part of the year. It must, however, be borne in mind that there are a great many plants and animals which are not confined to any one zone—the torrid, the temperate, or the frigid. Some are to be found in the hot zone and far into the mild zone, others in the mild and far into the cold zones. And as man himself can live near the poles and at the equator, so in like manner many kinds of plants and animals have a power of living under widely varying ranges of temperature.

Moreover, latitude—that is, distance from the equator—is not by itself a sure guide to the particular conditions as to the climate of any district. There are many circumstances affecting climate besides the heat directly received from the sun. Thus the presence of large bodies of water modifies climate, so that a continental climate is in general more extreme than an insular climate. The prevailing winds, the elevation of the land, the presence or absence of mountain ranges, these are all circumstances which influence climate.

5. CLIMATE.—II. WIND AND RAIN

The heat of the sun is a chief cause of winds: of the gentle breeze or the fiercest hurricane; of currents in the oceans, which move in the waters as the winds move in the air. Air is highly sensitive to the influence of the sun's heat. It expands when heated, and so, becoming lighter in proportion to its bulk, rises upward. Thus we know that the heated air of a room rises to the ceiling. Only, as the sun can heat millions of cubic miles of the earth's atmosphere at one time, the scale of its work is infinitely grand.

Suppose that a million cubic miles of air over any country were thus by the sun's heat made to rise up to higher levels, it is easy to understand that colder, and therefore heavier, air from the surrounding parts of the world would flow in to take its place. Thus would arise a wind blowing in from all directions.

Sometimes the heated air over a part of the world rises very rapidly; or, from certain causes, it may rise at different rates in areas adjoining each other. In this way a disturbance of the atmosphere is brought about, which may be a "hurricane" or a "gale" or a "stiff breeze". With a less disturbance lighter winds result, such as those which rustle the leaves, or, as we say, "whisper through the trees".

In parts of the earth near the equator the power of the sun's rays causes the air over both land and sea to become gently heated. As a consequence there is a constant upward flow of heated air, and colder and heavier air flows in from the polar regions, both north and south, to take its place. If the earth were at rest we should, as a result, have in the northern hemisphere a true north wind all through the year, and in the southern hemisphere a true south wind.

But, owing to the spinning motion of the earth on its axis, places at the equator move eastward at the rate of 1000 miles an hour, while, as we go north or south, where the distance round the earth becomes less and less, the speed at which places are carried forward becomes less. For this reason air, moving towards the equator, travels eastward more slowly than the places over which it is passing. The resulting effect is wind from the *north-east* and *south-east*, instead of from the north and south. These great winds, on account of the steady beaten path which they tread, year in year out, go by the name of the *trade* (or tread) *winds*.

As the constancy of the trade-winds is a great help to sailing ships trading round the world, people sometimes think they have received their name because they are helpful to trade. But although they are undoubtedly helpful to trade, they have received their name, not from that circumstance, but on account of their steady *tread* or path. The accompanying diagram will make clear the course of the trade-winds.

The movements of the atmosphere which exhibit themselves in the trade-winds have a profound influence on climate. By their means warm, moist air from the tropics is conveyed northwards and southwards, to be replaced by cold air from north and south. They thus effect a constant circulation of warmth about the world.

The trade-winds are constant only over the open ocean; and the larger the expanse of ocean over which they blow (as in the Pacific), the more steady they are. Where there are land-masses, such as India, the trade-wind is interfered with to such an extent that the direction is at times entirely reversed. The reason of this is, that during the hot season of the year the land becomes heated to a higher temperature than the sea, so that the air over the land becomes hotter than the air over the water. As a consequence it rises more rapidly, and a rush of air from the sea sets in to take its place. In this way the usual course of the trade-wind is disturbed. Thus in India, the south-west monsoon, as it is called, sets in in April, and continues for six months, bringing much-needed moisture to the parched land of Western India. During the rest of the year the regular north-eastern trade blows, and is the means of bringing moisture to the eastern side of India.

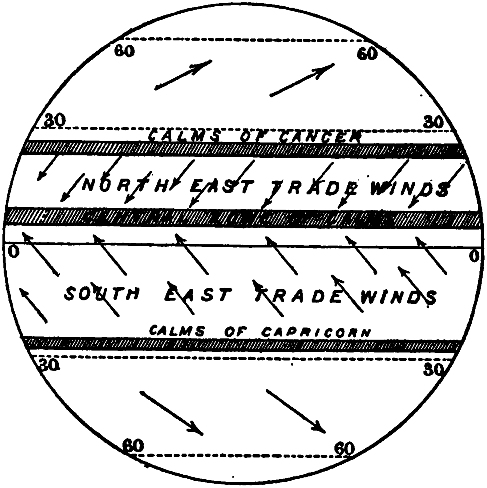
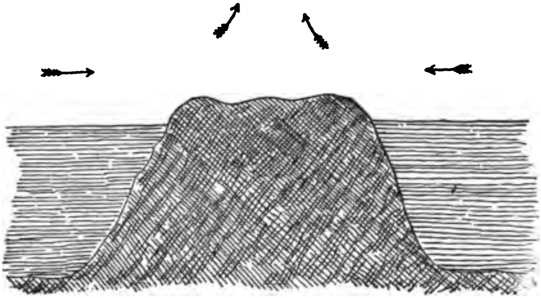


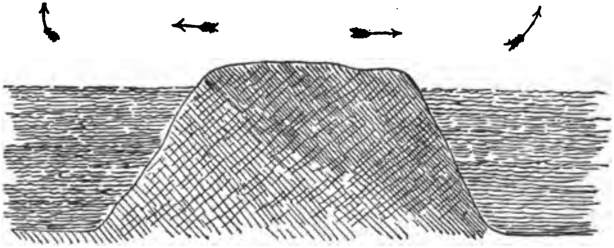
Diagram to illustrate the Trade-winds

Local *land* and *sea* breezes, which blow with greater or less regularity at every coast place, are in their cause similar to the south-west monsoons of India.



Sea-breeze

The accompanying diagrams explain the occurrence of such breezes. During the day the land becomes more heated, and at night cools faster, than the sea.



Land-breeze

Thus, by day, when the land is heated by the sun, the air resting upon it becomes hotter than the air over the sea. It consequently rises more rapidly, and its place is taken by air flowing in from the sea, and so we have a *sea-breeze.* At night the land cools faster than the sea, the air over the sea rises more

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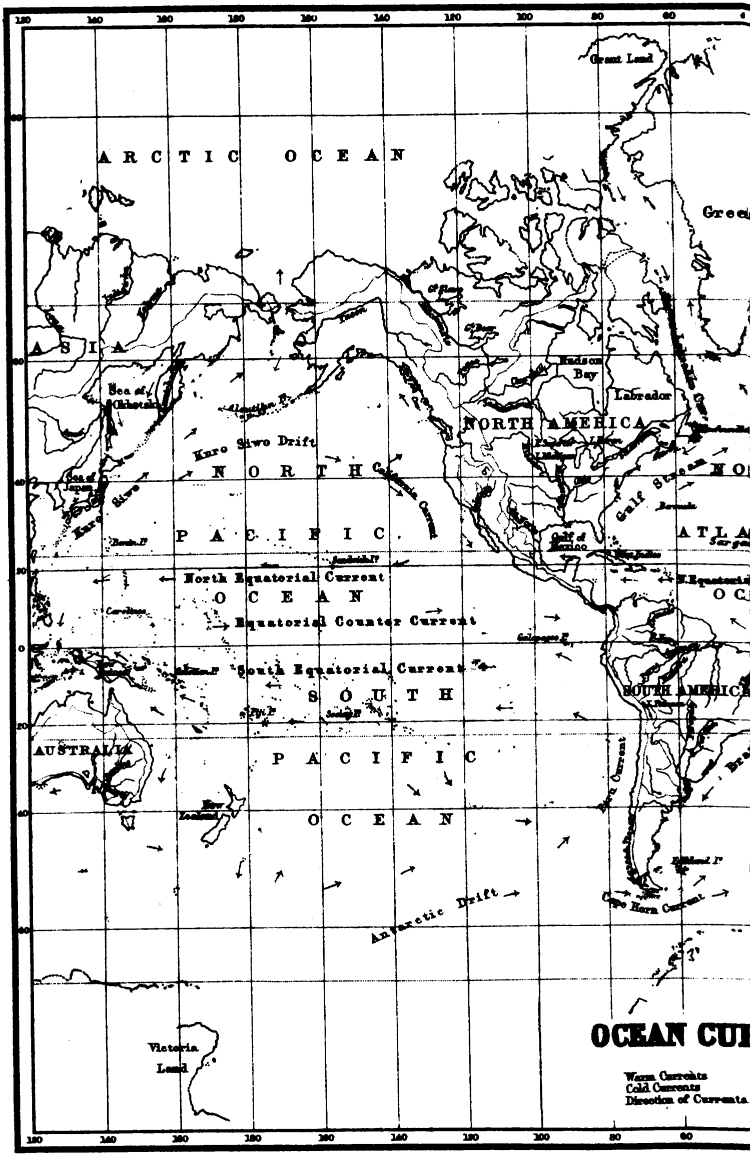
ARCTIC OCEAN
Grant Land
Green
ASIA
Sea of Okhotsk
Sea of Japan
Japan
Kuro Siwo
Kuro Siwo Drift
Aleutian Is.
Yukon
Hudson Bay
Labrador
NORTH AMERICA
California Current
Gulf Stream
Bermuda
Gulf of Mexico
West Indies
Sargasso
NORTH PACIFIC OCEAN
NORTH ATLA
Bonin Is.
Sandwich Is.
North Equatorial Current
N. Equatorial
Carolines
Equatorial Counter Current
Galapagos Is.
South Equatorial Current
SOUTH PACIFIC OCEAN
Fiji Is.
Society Is.
AUSTRALIA
New Zealand
SOUTH AMERICA
Peru Current
Falkland Is.
Cape Horn Current
Antarctic Drift
Victoria Land
OCEAN CU
Warm Currents
Cold Currents
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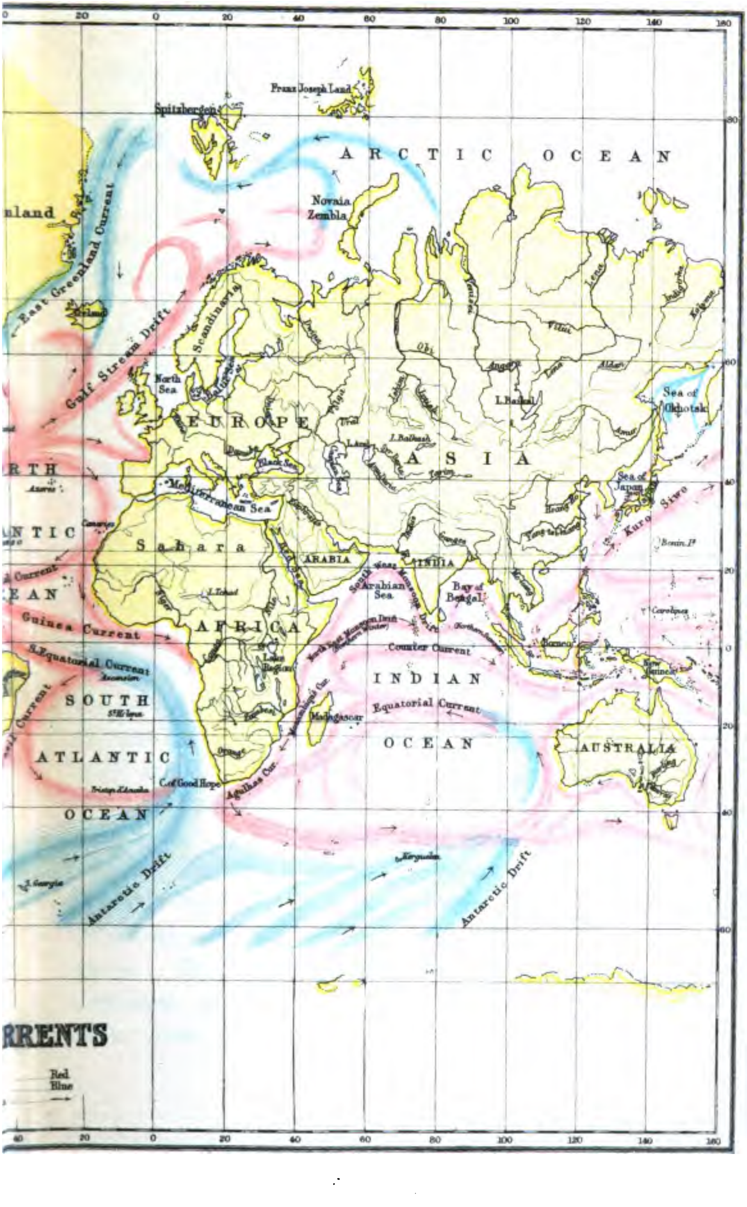

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Red
Blue
ARCTIC OCEAN
Franz Joseph Land
Spitzbergen
Novaia Zembla
nland
East Greenland Current
Iceland
Gulf Stream Drift
Scandinavia
North Sea
EUROPE
Black Sea
Mediterranean Sea
RTH
Azores
NTIC
Canaries
Sahara
ARABIA
INDIA
ASIA
Obi
Yenisei
Lena
Vitim
Aldan
Angara
L. Baikal
L. Balkash
L. Aral
Sea of Okhotsk
Amur
Sea of Japan
Kuro Siwo
Hoang Ho
Yang tse kiang
Ganges
Bonin Is.
Carolines
Current
EAN
Guinea Current
S. Equatorial Current
Ascension
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St. Helena
ATLANTIC
Tristan d'Acunha
OCEAN
C. of Good Hope
L. Tchad
Niger
Nile
AFRICA
Congo
Orange
Madagascar
Mozambique Cur.
Agulhas Cur.
South West Monsoon Drift
Arabian Sea
Bay of Bengal
North East Monsoon Drift
Counter Current
INDIAN
Equatorial Current
OCEAN
Borneo
New Guinea
AUSTRALIA
Kerguelen
S. Georgia
Antarctic Drift
Antarctic Drift
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rapidly than over the land, and a breeze from the land sets in.

Heat, *wind*, and *rain* work hand in hand, each dependent on the air. The heat of the sun enables the air to absorb water-vapour from any and every source: from the seas and lakes and rivers, from the pools and muds of our roads and streets, from the very linen which is hung out to dry, from the soil, from the vegetation, and even from rocks and stones. The more it is heated the more the air wants. It drinks up millions of tons of water every day, and every day millions of tons of that same water fall upon the world as rain.

Wind transports the clouds and the rain to every part of the earth; hot winds conveying heat from the equatorial regions towards the poles, and cold winds returning in the direction of the equator, tend to equalize the conditions of heat and cold over the globe. The wind thus ensures that the water-vapour which the air takes up shall be distributed over the world, so that its vegetable and animal forms may be supplied with water. It conveys the needed moisture over long distances. From the sea, where the moisture has been gathered, the wind may pass over a flat country without yielding up the water which it bears. It may hold it till it strikes some high and cooling mountains, upon which the moisture falls as rain or snow. The replenished streams returning to the sea continue to water the land and moisten the air in their flow.

6. CLIMATE.—III. OCEAN CURRENTS

The currents of the ocean, like the currents of the air, are highly important for the effect they have upon the climates of different regions of the earth. The existence of these currents has long been known. They are like rivers in the sea. Some of them have courses thousands of miles long; at times they are found flowing in opposite directions, either side by side, or one above the other. It is easy to trace a stream through the land, but how can one be traced through an ocean of water?

Sometimes the ocean current can be seen, its waters differing in tint from those through which it flows. Its presence, however, can always be proved by letting down a thermometer into the sea to discover the temperature; for it is well known that all currents are always either warmer or colder than the sea on either side of them.

The direction of a current's course has been often proved by throwing into it sealed bottles containing papers, on which were carefully noted the exact place where they were thrown overboard, and the date. These messengers often float for hundreds of miles; and some that have been thrown into the Gulf of Mexico have been picked up on the shores of the British Isles.

Ocean currents have three causes:—

(1) **Thermal Circulation.** — The blazing heat of the tropics and the extreme cold of the polar regions are instrumental in setting up a surface current of

warm water from the equator towards the poles, and an undercurrent of cold water from the poles towards the equator. This has been illustrated by a neat but simple experiment. A narrow trough is filled with water; at one end a lump of ice is placed to represent one of the poles, and at the other end a bar of iron, kept heated by a spirit-lamp, to represent the heat of the equator. A few drops of blue-coloured liquid are introduced into the colder end, and some red-coloured liquid into the warmer end. A current is seen to arise: the blue water (the colder) sinks and flows to the hot end; the red (the warmer) rises and flows in the opposite direction to the cool end, where it is cooled, sinks, and returns, a steady circulation being thus maintained.

(2) **Wind Circulation.** — The force of the trade-winds blowing steadily in a fixed direction produces a surface-current of the ocean waters.

(3) **Circulation from Evaporation.** — The heavy evaporation at the equator induces a flow from farther north and south, to make good the water lost in this way. An interesting instance of a current produced in this manner is seen at the *Strait of Gibraltar*, through which a current flows steadily into the *Mediterranean* to make good the water there lost by evaporation.

The general effect upon climate of the ocean currents is to equalize the temperature of the different parts of the ocean, and hence of the land. The *Gulf Stream*, a current to which Britain owes her temperate climate, well exhibits the wonderful influence of these currents generally.

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Although it is a warm current, it may be said to really have its origin in a cold current from the Southern Ocean, which flows along the south-west coast of Africa. Turning westward about the equator, it becomes, as the *South Equatorial Current*, a warm current. Then, sweeping round the northern shores of South America, it enters the Gulf of Mexico, whence it issues as the *Gulf Stream*.

The *Gulf Stream*, flowing north-east, divides into two main portions, one of which bends southward towards the north-west of Africa; the other, flowing past the shores of Great Britain and Norway, at last loses itself in the Arctic Ocean.

The Gulf Stream bears warmth to our shores, and to it is due the fact that in spite of the high latitude in which our land is situated, we enjoy a climate devoid of either extremes of heat or cold. The enormous influence of the Gulf Stream upon our climate is brought home to us, if we compare Britain with the corresponding latitudes on the east coast of North America. There the cold, barren shores of Labrador show us what our land would be but for the life-giving warmth of the waters of the Gulf Stream.

Labrador not only does not receive the warmth of the Gulf Stream, its shores are chilled by the cold Labrador current flowing from the Polar Sea. Again, on the north-west coast of North America a warm current from the South Pacific tempers the climate, which is much less extreme there than in the same latitude on the north-east coast of the same continent.

7. CLIMATE.—IV

The climate of a country is much influenced by its nearness to or distance from the sea or from masses of inland water. Water absorbs heat more slowly, and also gives it out more slowly, than land; so that a country much broken up by masses of water, or an island country like Britain, has a more equable climate than land far removed from the sea or from sheets of inland water. Thus, in our own country the coast districts are generally warmer in winter and cooler in summer than inland districts.

In the island of Mull, for example, snow seldom lies; and mild weather is often experienced there during winters in which the inland parts of Scotland are frost-bound for weeks at a time. In like manner the peninsular part of Ontario, in Canada, lying between the great lakes Ontario and Huron, has a much milder winter climate than the neighbouring districts farther removed from the lakes. Peaches, grapes, pears, and many other fruits grow there to perfection. Indeed, the fine climate produces a richness of vegetation that has given to that part of Ontario the name the *Garden of Canada.*

The character of the land surface has also much to do with the climate of any particular district. High levels are colder than low levels, the mountain top than the valley. Accordingly, elevation has much effect on the temperature of a land. For instance, *Quito*, in South America, is situated in one of the hottest parts of the globe, yet, through being built on a plateau some nine thousand feet high, it enjoys a pleasant climate. Similarly, in South Africa the coast region is low-lying, and the climate in summer excessively hot. But the great plain of the Karroo, standing some 4000 feet above sea-level, has a comparatively cool climate. In the Himalayas, again, an Alpine climate prevails, though the general character of the Indian climate is tropical.

Mountains, by intercepting winds and by causing the clouds to give up their moisture, have a very great effect on climate. They may give shelter from cold winds, as the Alps shelter the sunny land of Northern Italy; or they may intercept warm winds, as the Rocky Mountains keep the mild airs from the Pacific from reaching the plains of the Canadian north-west.

But it is through their influence on rainfall that mountains most profoundly affect climate. On a large map of the World we can see large tracts of the earth's surface marked "rainless tracts", or *desert.* They are desert because of the absence of rain. There are the *Sahara* and *Arabian* deserts, running right across North Africa into Asia as far as North-western India. And north of the Himalayas the rainless desert of Tibet. There are also rainless districts in South America, in Mexico, and in Australia.

The effect of mountains on rainfall is well illustrated in our Indian Empire. That great country is situated in the region of the monsoons; that is, of winds which, as we have seen, blow in one direction half the year, and in the opposite direction the other half.

Thus, from October to April the prevailing wind is from the north-east and blows off the land. Little or no rain, therefore, falls in that season in Western India. But from April to October the winds blow from the south-west, and bring from the Arabian Sea and Indian Ocean enormous quantities of moisture to the western shores of India, where the fall is in places from 190 to 280 inches. Where the Western Ghats or coast-range of mountains partly intercept the winds there is not so heavy a fall in the interior of the country, but when the winds reach the great range of the Himalaya Mountains to the north, the rains again come down in torrents, culminating in Assam in *the greatest rainfall in the world.* Thus is fed the magnificent water-system of India, of which the Brahmapootra, Ganges, and Indus are the chief rivers.

But let us observe, that by the time the winds have crossed over the Himalayas, the highest mountains in the world, they have become so dry that no possible rain is left for great tracts beyond, which, as a consequence, remain arid desert.

Similarly, in Australia, where the mountains are mostly ranged round the coast, the moist winds of the ocean give up their moisture before they reach the inland region, which, as a consequence, remains a dreary desert. Again, in South Africa the lofty mountains of the coast occasion an absence of rain in the interior during a great part of the year, so that there is a desert region in the south as well as in the north of this continent.

The amount of rainfall in a country and its distribution, that is, the number of days on which rain falls in a year, are of necessity most important elements in a country's climate, determining naturally the character of its productions, animal as well as vegetable. In Britain we have a reasonably steady rainfall all the year round. In India, as we have seen, there is a wet season and a dry season. In Britain rain falls on the average on about 160 days in the year, and the highest recorded fall at any one point is 182½ inches in that time. In the tropics, on the other hand, rain falls only on 80 days of the year on the average, but as much as 615 inches has been known to fall in that time in Assam.

8. THE SEASONS

Along with climate, the *Seasons* must be reckoned as influencing industrial conditions.

We are all familiar with the fact that our year is divided into four portions, which are named Spring, Summer, Autumn, and Winter. But though we know that spring is warmer than winter, and summer warmer than spring, and that the autumn grows colder again, and that winter is the coldest season of all, many of us perhaps do not understand how this change of seasons comes about.

It comes about, apparently, because in the spring the sun is getting higher and higher in the heavens, until in the summer-time it is very high at noonday and we receive a great deal of its heat, the days are very long, and there is little actual night. Towards autumn, again, the sun seems to get lower and lower in the sky, till when winter comes round it is quite low down even at mid-day and we receive little heat, the days being short and the nights long.

It looks as though the sun were constantly changing his path. But this, as we know, is not the case. The sun, so far as we are concerned, does not move, but is the fixed centre around which the earth, and all the other planets of the solar system, revolve. It is *the earth that moves*; it makes every year a very long journey round the sun, and this movement round the sun brings about the seasons.

Every one of us knows that we have day and night because the earth turns completely round upon its own axis every twenty-four hours, or, to be perfectly correct, in between three and four minutes less than twenty-four hours. To us, however, it is the sun that seems to move, and hence we speak of his rising and setting.

You could yourself keep turning round while you went right round your school-fellow. It is just so with the earth: while it turns round upon itself every day of twenty-four hours, it is at the same time going on its enormous journey right round the sun, which it completes in 365¼ days.

The earth's path around the sun is called the earth's *orbit*.

If the earth's axis were perpendicular to the plane of its orbit (or path around the sun), the sun would always shine exactly overhead at the equator; there would be equal day and equal night all over the world all the year round (instead of only twice a year), *but there would be no seasons.*

But the earth's axis is not perpendicular to the plane of its path round the sun. The earth leans, as it were, to one side at an angle of 23½ degrees. Consequently, as the earth moves along on its great yearly path, the north pole is inclined away from the sun during a part of the journey, and inclined toward the sun during the other part of the journey. And, of course, when either the north or south pole is turned away from the sun, the opposite pole is turned toward it. This motion of the earth round the sun is made clear in the accompanying diagram.

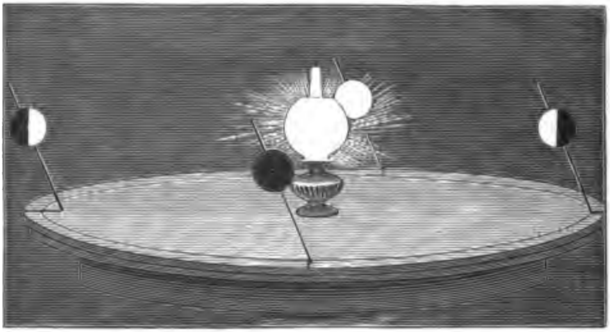
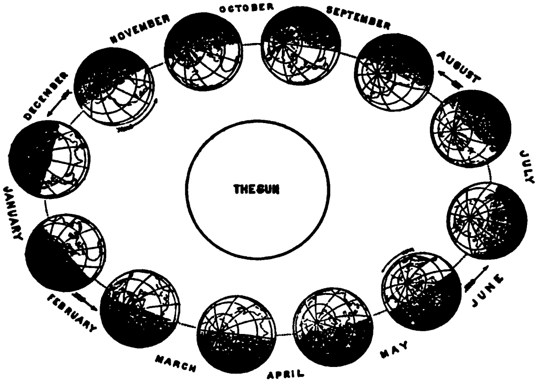


Diagram of Ball with Wire Axis in four positions, slope of wire being same in each case

In this way it comes to pass, that as spring advances, the northern hemisphere, which we inhabit, is gradually coming more and more into the light and heat of the sun, until, on the 21st of June, the north pole is turned so much toward the sun that, within the polar circle, the sun shines all the twenty-four hours. Within the south polar circle at the same period the sun does not shine at all. The north has perpetual day, and the south perpetual night.

After the 21st of June the days in our northern hemisphere begin gradually to shorten, and the nights to lengthen; because, as the earth continues on its journey round the sun, the "lean" of its axis causes the north pole to point away from, and the south to point towards, the sun. Then come the long days for the southern hemisphere, and the short days for the northern.



Yearly Motion of the Earth round the Sun

When it is spring and summer for the world south of the equator, it is autumn and winter north of it. Hence the 21st of December, our shortest day and the depth of winter, is the longest day in the southern half of the world, and the height of summer. The farther we go north in winter the longer the nights become, till in the north polar circle there is one unbroken night.

Equal days and equal nights occur over the world on March 21st, which is called the *Vernal Equinox*, and on the 22nd of September, which is the *Autumnal Equinox*. The 21st of June and the 21st of December are called the Summer and Winter *Solstices*—from Latin *sol*, the sun, and *sto*, I stand—because the sun then seems to stop and turn back.

9. THE INFLUENCE OF CLIMATE ON PRODUCTIONS

As a striking example of the influence of climate on productions let us look first at its bearing on *wheat*, the chief of all our food-stuffs, and on some of the other common cereals.

Wheat loves hot and dry sunny plains so long as these are either north or south of the "tropics". It hardly grows anywhere within the tropics, because it doesn't like so much heat as is found within these regions. Nor can it bear so much cold as oats and barley and rye can bear; and it is therefore not found either so far north or so far south on the globe as these cereals.

Oats and barley grow best in a more moist climate and with less sun than wheat requires; and as they stand more rigorous conditions than wheat, they are often grown where wheat would never ripen. They could not grow in so dry an atmosphere as wheat loves best, because they have not the provision of the deep-growing, water-seeking root which wheat possesses. Thus the oat reaches its highest perfection in Scotland, where wheat is a much less successful crop.

Rye will grow and ripen, as in Northern Russia and Siberia, where neither of the other cereals ever would thrive; and consequently in many districts in these lands, where there is comparatively little communication with the outer world, the inhabitants see nothing but rye bread all the year round.

But there is one curious fact about these plants that may perhaps puzzle us; it is this:—

If we started on a long journey, say from the north of Lake Winnipeg in Canada, and continued to go straight south for two thousand miles through the United Sates to the city of Mexico, we should find wheat growing all the way down, though the climate from our starting-point became warmer and warmer as we neared the end of our journey.

The answer to this puzzle is, that wheat, and, in fact, all other vegetables, require a certain amount of heat to bring them to perfection, and the sooner they get that quantity of heat, so long as it is never too hot, the sooner they ripen. Thus, so long as the wheat can stand the heat through all this 2000 miles it can grow and ripen; the difference being that it will ripen in a shorter time in the hotter and sunnier south than in the cooler and less sunny regions of Canada.

Climate is the all-important element in the distribution of plants throughout the world, but the climate of the world varies even in the same latitude according to physical conditions, the presence or absence of mountains, the presence or absence of the sea, or of forests and rivers and lakes. Hence we find the lines which we might draw around the world as the extreme northern or southern limit of the growth of certain plants, rising more towards the north here, or going more toward the south there, and never, in fact, continuing for great distances straight along east and west.

If we again take wheat as an example, we find that it will grow on the west (Pacific shore) of Canada several hundreds of miles farther north than it will on the eastern (Atlantic) shores of the Dominion. This looks like a puzzle, because there is the near presence of the ocean in both cases.

If, however, we refer to a map of the world which shows the ocean currents, we shall find that a great ocean current is forever running eastward across the North Pacific Ocean straight for the western shores of the States and Canada, that this great current then divides, part going north along the north-western shores of the Dominion, and part going south toward Mexico.

The effect of this current,[1] which arises in the Indian Ocean, and is there heated and passes along the eastward shores of China and Japan, is to heat the winds of the North Pacific Ocean, and, as they blow almost continuously from the west, to raise the temperature of North-western Canada, so that the wheat will grow on the western side to quite high latitudes.

Now, if we look to the east of Canada we shall find that a cold sea current comes down from the Arctic regions along the coast of Labrador and Eastern Canada and Newfoundland, and as there are here no warm westerly breezes, the line of the possible growth of wheat goes on the Atlantic shore hundreds of miles farther south than on the Pacific shores.

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[1] But the portion of the current which goes south to Mexico into the actual tropics, having become chilled in its northern journey, so cools the region of the extreme southern Mexican States, that with the aid of the moisture from the western winds, barley and oats actually thrive well even in that tropical region, the climate being cooled by the current from the north.

Moreover, if we look again at the British Isles, and notice that they are in the same latitude as Labrador, we have once more to ask why all the common cereals grow freely and well in one or other part of Britain and none of them in Labrador.

The reason is, as before, the existence of a great heated ocean current, the Gulf Stream, which so modifies our climate that wheat grows freely in Britain; while across the ocean, in the same latitude, the coasts of Labrador are ice-bound half the year, and neither wheat nor other cereals will grow.

In wool we find another object-lesson showing the influence of climate upon productions. The hot climate of Australia is favourable to the rearing of fine-woolled sheep of the merino type. In Canada, on the other hand, where the winter is long and severe, the sheep that thrive are a coarse-woolled variety. Lastly, Scotch wool, produced in a mild, moist climate, is neither so fine as Australian wool nor so coarse as Canadian wool.

10. THE INFLUENCE OF MINERAL RESOURCES ON INDUSTRY AND TRADE

The natural mineral resources of a country have much to do with that nation's trade. If minerals occur profusely in any country, and the inhabitants of that country have the intelligence and the energy to make good use of them, we may safely say that that nation has the prospect before it of becoming commercially great, and proportionately a powerful nation.

This is only natural, inasmuch as we can only work with what we have. If coal be present, we can do no end of things with that alone. We can raise it and sell it, we can drive engines with it—railway-engines, engines for flour-mills, for cotton-mills, for weaving or spinning, and pump-engines for draining land or for filling reservoirs. With coal present in any district in a country, that district may become a great centre of manufacturing and trading activity. If other minerals, such as iron or copper ores, occur along with the coal, the district may probably attract not only industries that depend on coal alone, but also industries that depend on the other minerals present.

There would first of all be the smelting of these ores, iron or copper, or both, into the more easily-transported form of "pig-iron" or "pig-copper", that is, into rough masses of the "reduced" metal in place of the much more bulky ores. This smelting could naturally be done more readily and more cheaply where the coal and the iron lay ready to hand together, than in places where they were distant from each other. These or similar natural conditions explain the occurrence of great manufacturing and industrial centres in particular places.

And one thing naturally leads to another, as we can imagine, and as we know is the case. For instance, where iron is smelted it is natural that iron goods should be made; and where iron is worked up into useful articles there is simply no limit to what may be produced from it. It may be moulded into "cast-iron" goods, it may be wrought into "malleable" iron or into steel, and an endless variety of useful articles made of it. It may be made into steel rails for our own use or for the use of other countries, or into steel plates for our traders or our warships. It may be made into bridges or into iron-clads. It may be made into an engine to draw a train, to drive machinery, or to drive an iron-clad. It may be made into the finest of needles, or into the most ponderous of steam-hammers.

This is but an illustration of how the natural mineral resources of a country affect its industries and trade. A country might, of course, as some do, simply export its natural mineral ores. But even then the ores are a source of greater or less prosperity, in being exchanged for other commodities. Spain, for instance, exports iron-ore to the Clyde, and imports from the Glasgow district locomotives and other productions of the engineering shops.

As with minerals, so with the other resources provided by nature. Yorkshire is a land well suited for sheep-farming, and Yorkshire dales have many becks or rivulets that provide water for cleansing and dyeing purposes, and water-power for spinning and weaving. So, Yorkshire early became a centre of the woollen industry, just as Staffordshire did of the iron industry.

In general, we may say that a country is naturally prosperous in proportion to the abundance of its natural resources and the industry of its inhabitants.

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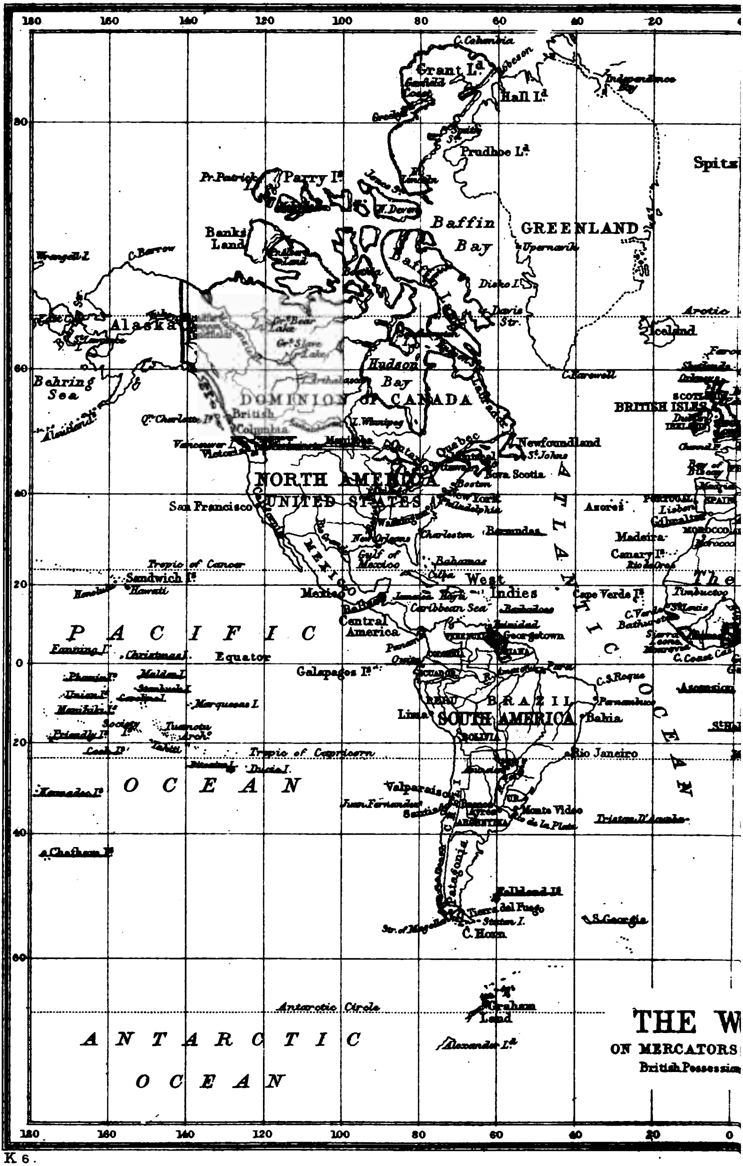
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C. Barrow
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P A C I F I C
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C. S. Roque
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Malden I.
Starbuck I.
Union Is.
Caroline I.
Marquesas I.
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Society Is.
Tuamotu Arch.
Friendly Is.
Tahiti
BOLIVIA
St. Helena
Cook Is.
Tropic of Capricorn
Rio Janeiro
Pitcairn I.
Ducie I.
O C E A N
Valparaiso
Kermadec Is.
Juan Fernandez
Santiago
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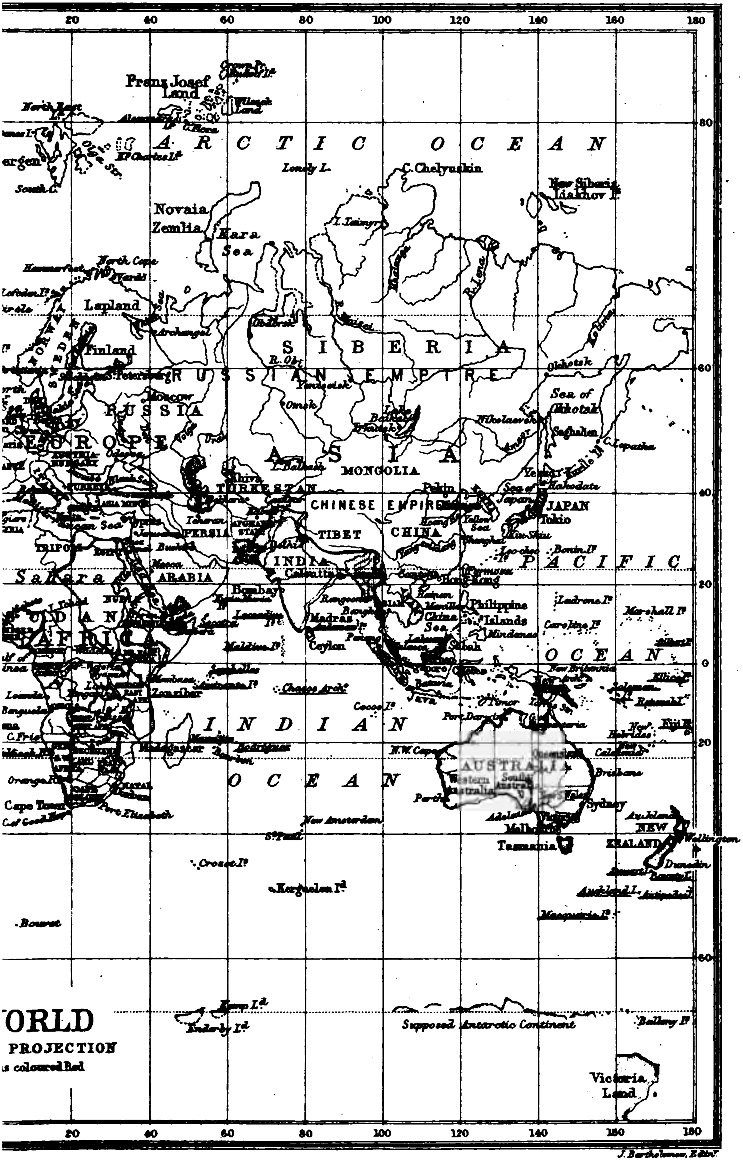

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THE ANGLO-SAXON TRADING COMMUNITIES

II. THE BRITISH EMPIRE

WHAT WE ARE.—I

There have been great and mighty nations in the world — nations which became what they were by invading and conquering other nations, and so extending their empire. Such were the ancient Assyrians, the Egyptians, the Romans, and to some extent, in later times, the Spaniards. But the purpose of the older nations in their invasions was generally pillage and the levying of tribute; that is to say, they chiefly sought to make themselves wealthy by the degradation of, and at the expense of, the conquered countries.

But there has come about in later times a different idea of what the extension of empire and the conquering of the world means. Certain nations in Europe began to see that the best way of making themselves prosperous was to seek out other nations with which they could trade, or to find new countries which their own people could colonize, and from which, by agriculture or mining or by other means, they might supply the home trade with new and valuable commodities.

The Portuguese, the Dutch, the French, the English, have pursued this mode of conquering other lands for several centuries, with altogether such results as the world never before has seen in all its history—such results as were never attained by the enterprise and influence of all the ancient nations put together.

But while Portugal, and Holland, and France, and other nations have achieved great things, and still have possessions in various parts of the world, they have, for reasons which we cannot consider here, repeatedly lost as much as they gained. To-day no nation in Europe save Russia has possessions outside its own country at all comparable to the British Empire. Britain is, in fact, the only great power which has kept its colonial possessions in unbroken union with itself (with the exception of the one great loss of the American colonies).

And so, when we come seriously to consider our national heritage, we may well be astonished at its greatness. We see that the British Isles, which Cæsar two thousand years ago in part conquered, are now the home of a people whose possessions constitute one-fourth of the land surface of the whole world.

Let us try to realize it. Britain is, through enterprise and energy, and through the faithfulness to the mother-country of her own children, mistress of the countries of the world to the extent of more than a hundred times her own area. That is to say, she rules as much of the surface of the earth as would make more than a hundred such countries as Great Britain and Ireland together.

And if we consider the children of the British nation to be those who now speak our tongue, who profess our religion—though all such are not now under our rule—if we consider them under the great name of the "Anglo-Saxon race", in which we must include the United States of America, we find that the possessions claimed by the children of Britain who speak the English tongue, extend to well-nigh a third of the world's habitable surface.

Well might an English poetess half a century ago sing these heroic verses—

There's a land that bears a world-known name,
Though it is but a little spot;
I say 'tis first on the scroll of fame,
And who shall say it is not?
Of the deathless ones who shine and live,
In Arms, in Arts, or Song,
The brightest the whole wide world can give,
To that little land belong.
'Tis the star of earth, deny it who can,
The island home of an Englishman.

There's a flag that waves o'er every sea,
No matter when or where:
And to treat that flag as aught but the free
Is more than the strongest dare.
For the lion-spirits that tread the deck
Have carried the palm of the brave;
And that flag *may* sink with a shot-torn wreck,
But never float over a slave;
Its honour is stainless, deny it who can;
And this is the flag of an Englishman.

There's a heart that leaps with a burning glow,
The wronged and the weak to defend,
And strikes as soon for a trampled foe
As it does for a soul-bound friend.

It nurtures a deep and honest love,
It glows with faith and pride;
And yearns with the fondness of a dove
To the light of its own fireside.
'Tis a rich, rough gem, deny it who can;
And this is the heart of an Englishman.

The Briton may traverse the pole or the zone,
And boldly claim his right,
For he calls such a vast domain his own
That the sun never sets on his might.
Let the haughty stranger seek to know
The place of his home and birth,
And a flush will pour from cheek to brow
While he tells his native earth.
For a glorious charter, deny it who can,
Is breathed in the words, "I'm an Englishman".

12. THE BRITISH EMPIRE.

WHAT WE ARE.—II

If we make a brief survey of the British Empire, by taking a view of the countries which have grown up as our own colonies, and of those which are largely under our rule, we must pass under review the entire surface of the globe. In this survey we must include the whole of North America north of the United States, with the exception of Alaska and Greenland; we must look upon the whole of the island continent of Australia, with New Zealand and other adjacent islands; the great expanse of India and Burmah; fully one-third of Africa, some tracts in South America, and important islands, like Ceylon, Mauritius, and Jamaica, scattered about the world, and too numerous to mention. This is our vast empire upon which the sun can never set, because it extends, broadly speaking, the whole world round and from pole to pole.

We can get some idea of what our empire is by comparing the actual area of the British Isles with the united areas of all our possessions. Thus, whereas England, Ireland, Scotland, and Wales altogether comprise an area of 120,000 square miles, the countries over which we rule have a united area of nearly 13,000,000 of square miles, an area in comparison with which that of the mother-country is utterly insignificant.

Again, the population of the British Isles is over 40,000,000, whereas the population of the British Empire throughout the world is over 400,000,000, or more than one-fourth of the whole population of the globe.

Or, once again, if, instead of the British Empire, we consider the great English-speaking people, or the whole Anglo-Saxon race, we must include the United States, then we find that the population under the control of this race is nearly one-third of all the world's inhabitants.

If this is something to be proud of, it is also something which should make us feel what a serious responsibility we have in the world; and how our position in the world may in the future be even greater, if we know how to keep and to make good use of those possessions which are now in our power.

All North America, except Mexico, is speaking, or is learning to speak, our tongue. The same may be said of Australia and New Zealand, of the West Indies, and many other large islands, and of tracts in Africa and South America; and the same may in a less degree be said of our Indian and other Asiatic possessions.

All this is very wonderful; so wonderful, in fact, that the world has never seen anything like it before. And now it is our duty to try and realize the importance and the magnitude of our position, to be jealous of it, to be for ever on our guard to maintain our honour and our unity; and if we do this we shall in the future do yet greater things, and attain a yet more wonderful and exalted position in the world.

13. THE BRITISH EMPIRE

HOW IT HAS BEEN BUILT UP

It is good for a man or boy to be, as we commonly say, "put upon his mettle"; even by injustice or by ill-treatment, by competition, as in games and sports, or by the more serious competition of real life, as in trade or manufacture.

What is thus good for man or boy is equally good for a nation. Of this the history of our own country provides ample illustration.

It is only a little more than three hundred years ago since the destruction of the Spanish Armada put a period to Spain's high place among the nations. As lords of the Americas, the Spanish had harried and worried, and in every way ill-treated, British seamen and traders. This put British men "upon their mettle". Britain determined to build ships which should be able to compete with those of the Spaniards.

And, in the event, not only were the Spaniards held at bay by the British vessels, but the Spaniard soon learned to his cost that the British sailor was not only the more able seaman but also the braver man. The tables were turned: private merchantmen from British ports repeatedly took Spanish ships containing often immense treasure; they even invaded and pillaged Spanish possessions in the West Indies and parts of South America.

This procedure cannot be held up for imitation, or for our admiration, except in so far as it shows what we were able to do when it came to a trial. But what we have here to learn is this: that having been put to a national trial of strength we found out what we ourselves were capable of, and from that time to this we have gone on to build up the empire, not by robbery and violence, but as real colonizers of the world, and as great traders and carriers.

Our mariners left off mere marauding expeditions against the Spaniard, and began to seek for countries in which trade could be extended. Not that they had done nothing of the kind before: John Cabot had discovered Newfoundland, for instance, in 1497. A hundred years later Sir Humphrey Gilbert took possession of it for Queen Elizabeth, and the first British colony in that island was founded in 1623. But when, having no longer to fear the Spaniard, our sailors ventured into every possible part of the world, then we began in earnest to found what is now our British Empire. And trade has followed in the wake of those who had the enterprise and hardihood to lead the way.

But our empire throughout the world is built upon, and is maintained by, our commerce. From early days it has been largely extended by great merchant companies whose sole purpose was trade. Some of these great merchant companies have done more for our national prosperity than great invading armies could have done. Chief among them may be named the great "East India Company" and the great "Hudson Bay Company"; and in latter days we have the great companies of Africa: the British South African Company, the British East African Company, and the Niger Company. The spirit of these companies of traders and colonizers, and the kindred spirit in Britain's sons wherever they have been, has caused this great commercial empire to grow up.

14. THE COMMERCIAL EMPIRE

WHAT WE HAVE BUILT UP

We have attempted to see in our previous readings what we as a nation have done for ourselves, and how we have done it. We have seen that we have planted ourselves all over the world, in many different climates, and indeed in almost every condition of climate the world can offer. We have called the result of all this our *Commercial Empire*. That is what it really is; but what do we mean by the phrase *Commercial Empire*?

It in effect means that we have made ourselves into a world-wide business people, whose great market is the world itself, whose "places of business" are scattered over its surface like merchant premises in a city; that we are, in fact, the big trading-house of the English-speaking people—the biggest commercial concern of this or any other age.

When we have taken the trouble to measure the united extent of the countries which we inhabit, or over which we rule, we have been astonished at the vastness. We have been just as much astonished when we have counted the people over whom our queen exerts regal authority. Many other things in this empire of ours might equally astonish us if measured or counted in the same way. Let us take just one thing as measured by comparison with all the nations of the world, and that is the means which we possess of carrying on this vast business of transporting our merchandise from pole to pole, and till Britons meet in the extremes of east and west.

Of all the ships in the world the British empire possess more than half; that is, fifty-five out of every one hundred of all the ships that are carrying people or goods everywhere on the world's surface. The magnitude of our shipping strikingly shows us to be at the present time essentially a great trading empire. We may well be proud of our position. It should make every Briton, in whatever part of the world he or she may be, determined to uphold our dignity, determined to deserve the greatness which our fathers have so bravely and so widely won for, and handed down to us.

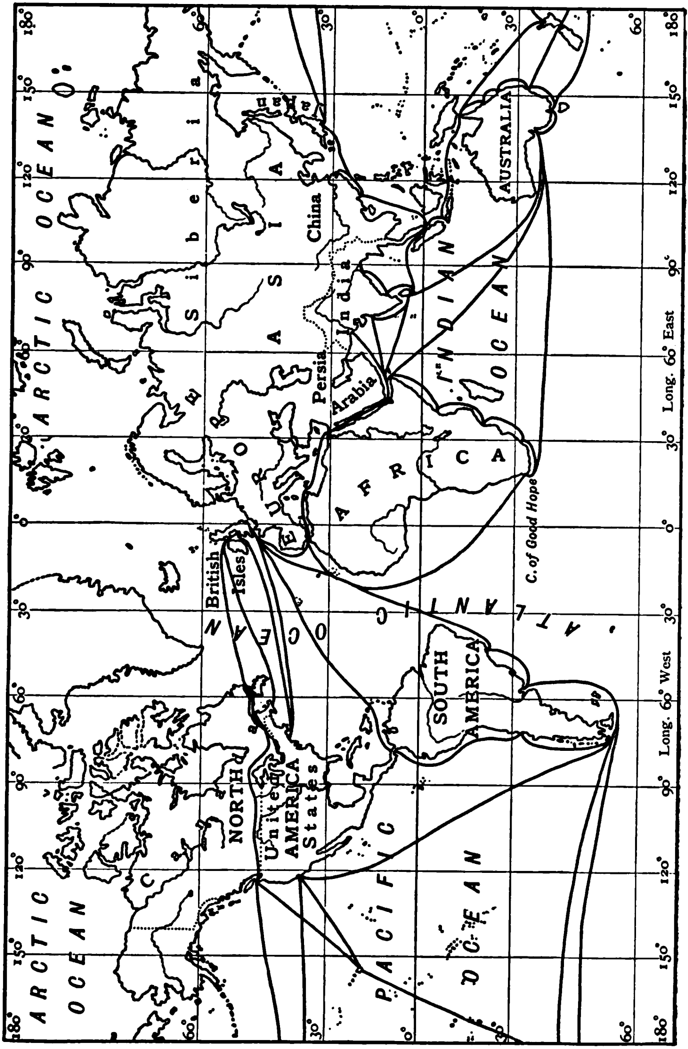
15. THE HOME LAND.—I

An able American writer has spoken of Britain as being "a little island, with little lakes, little rivers, quiet fields, but mighty interest and power that reach round the globe". And truly our home country is a land rich in mineral and other resources, fertile and good to live in, but too small to grow food enough for its teeming population. Thus it comes that if we are to feed all our people we must be alert, active, and industrious in manufacturing such things as we can exchange for food.

We have a climate neither too hot nor too cold, a climate which allows us to work out of doors, if need be, all day all the year round. We have much coal and iron; we are well supplied with harbours. Moreover, the fact that our land is an island gives us approach by sea to all parts of the earth. In time of peace the sea links us to the other nations, and brings their goods in ships almost to our doors; in war, it forms a bulwark to defend us from invasion.

It is, indeed, to her geographical position that Britain owes much of her success in trade. If we take a globe, or a map of the whole world, and place our finger upon the tiny portion which represents Britain, we shall see that the point of our finger occupies almost a central position among the earth's great land masses. It is as central as it could be for trade with Europe, Asia, Africa, and America.

If now we take a "commercial" map of the world, one which shows the routes of all the world's traffic,



Chief Trade Routes

we shall see that almost all the lines of route through the great oceans and overland are centred upon the British Isles. Our shores, too, are well suited for the accommodation of shipping. We have, for the size of our country, an immensely long coast-line, for although Great Britain is only some 600 miles in length, and Ireland about half that, the two islands have together the great extent of 10,000 miles of coast.

This is due to the fact of our shores being much cut up by bays and estuaries, which form splendid natural harbours for shipping. These harbours are made doubly useful by the navigable rivers, which open out into great firths or estuaries and give easy access to inland parts. And we owe to our temperate climate the inestimable advantage of having our ports always open: our shores and ports are never blocked by ice, and are approachable by sea all the year round.

Even the small size of our country, its "tightness" or compactness, is in some ways advantageous. Our home traffic is very expeditiously conducted, since all the great centres of production or of exchange are comparatively close together. Thus, to take extreme cases: London is only 9 hours from Glasgow, and 11 from Aberdeen; one could breakfast in London, and comfortably lunch in either Manchester, Liverpool, Birmingham, Leeds, Bristol, or other large trade centres. On the other hand, in the United States, New York is about 20 hours from Chicago, and a week from San Francisco. In fact, one can go over sea from London to New York

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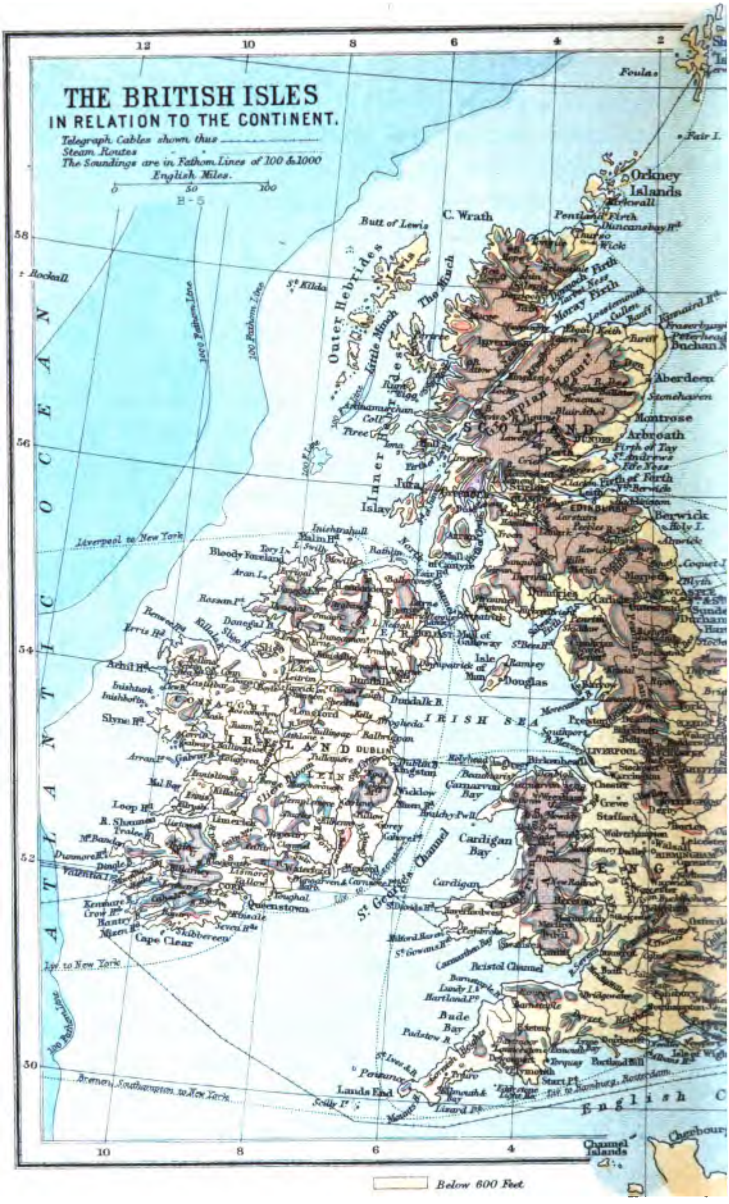
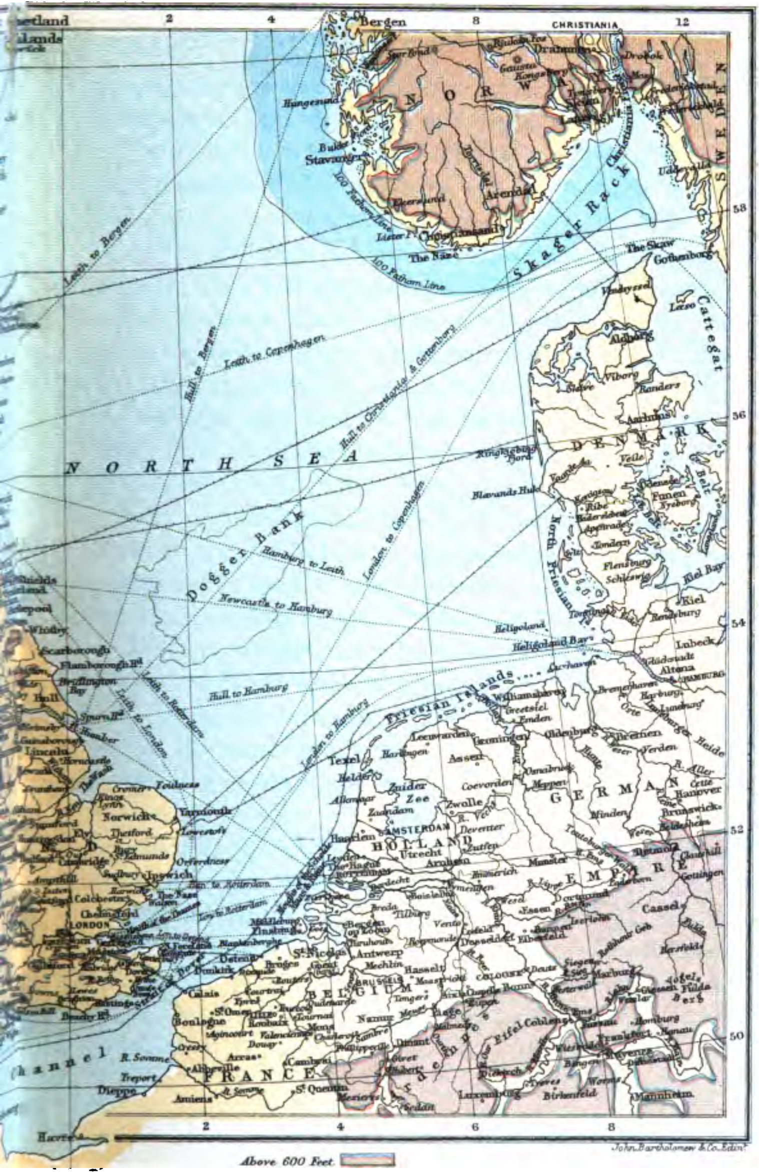


THE BRITISH ISLES
IN RELATION TO THE CONTINENT.

Telegraph Cables shown thus ----------
Steam Routes - - - - -
The Soundings are in Fathom Lines of 100 & 1000

English Miles.

Below 600 Feet



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almost as quickly as the New Yorker can go to San Francisco, and the cost of freight is less.

In Britain, on account of the very smallness and compactness of the country, all the various crafts are necessarily conveniently situated for each other. As the "raw" material for manufacture is largely imported from our colonies and dependencies, and from other nations, this is a manifest advantage. Thus, wool imported from Australia, the Cape, or Canada, or Russia, or India, into London, can in a few hours be sent to any part of the British Isles in which it may be wanted for manufacture. Or it might be jute imported into Dundee, sugar and tobacco to Glasgow, cotton to Liverpool, coffee and cocoa to Bristol, hides and timber to Hull or Newcastle. In every case, whatever is landed can be dispersed about the country by rail in a few hours.

Britain, indeed, may be likened to a well-regulated and disciplined workshop, in which tools and materials are promptly brought together, and again dispersed when the work is done. This point of Britain's geographical advantage has been summed up in the following words: "Great Britain, in fact, has undoubtedly far and away the best stand in the world's market. Its physical features (seaboard, harbours, navigable rivers), natural resources (such as coal, iron, fertility of land, &c.), and the general handiness of the whole place, whereby it can be arranged for work with the least waste of energy, give it this enviable position."

16. THE HOME LAND.—II

Of the mighty revolving commerce of the British Empire this tiny country is the centre. Or, we might call Great Britain the oldest member, the senior partner, of the great trading firm of the Anglo-Saxon race, of which the United States and our dependencies may be called the junior partners. And, to carry the comparison further, we may say that London is the head *warehouse* and *counting-house* of the whole business. In London, goods from all ends of the empire are stored, and from London they are distributed. Thus the great wool market of the world is in London: an American wishing to buy Australian wool, does not usually send to Australia for it, but to London, where he buys what he wants of the London dealer. In the same manner almost anything that the empire provides can be purchased in London.

In London, too, accounts are settled as between the different parts of the empire. Thus, Australia and Canada and the United States send to London payment of what they may owe to Britain. British merchants pay what they owe by cheques on London banks. Indeed, we might well call London the treasury as well as the head warehouse and counting-house of the empire.

The population of this vast city with its vast trade is vast almost beyond belief. Including suburbs it is some 6½ millions—greater than that of all Scotland, as great as that of Denmark and Greece together.

More than a thousand ships a week enter the port of London, for which constant coming and going of what is a vast navy every week 700 acres of docks are provided. The port of London owns some 3000 steam and sailing vessels of her own, and ships of all nations unload upon her quays a large share of all the produce of the world. The amount of the total annual export runs to £80,000,000, and its imports to nearly double that sum—about £150,000,000.

We must not forget that London is, after all, only a part of Great Britain; there are other great ports and great centres of trade and industry, as we all know, throughout the length and breadth of the British Isles. There is Liverpool, the great market for cotton, as London is for wool; there are Glasgow, Belfast, Bristol, Hull, Dundee, and many other ports. There are Manchester, Birmingham, Sheffield, and hosts of other centres of various thriving industries.

17. THE UNITED STATES.—I

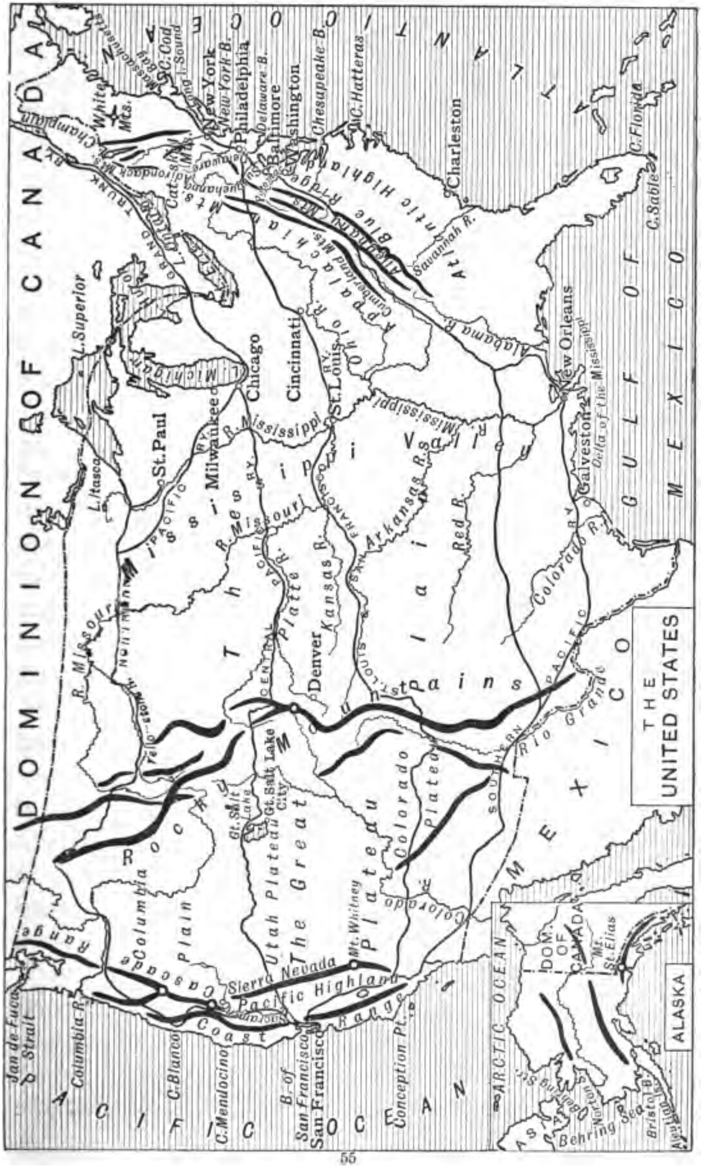
It is desirable that we should now pay a brief but observant visit to our more important fellow-members in the trading fraternity of the English-speaking peoples. In this passing inspection we must observe the extent, the physical conditions, the climate, population, and other features of the great colonies which our people have founded, and of the countries over which we rule and with which we trade.

Nor from this visit of inspection could we properly omit the United States of America. We should not do justice to that great state, nor to ourselves, by such omission. Its people are of our blood: they speak our language, they were once our colonists. It is the eldest and most advanced child of the mother-country. Moreover, the people of the States are such great traders with us and with our other possessions, that the commercial interests of the Anglo-Saxon peoples would only be half dealt with if the States were omitted from our review.

Our "cousins" of the United States have certainly a splendid freedom in the magnificent length and breadth of their country which we at home can in no way lay claim to. In the grandly-rolling navigable rivers, and equally grand lakes, which are together almost as big as our whole country, in the almost boundless yet highly cultivable plains, in the stretches of illimitable forests, the United States have a freedom for growth in population and expansion in trade and manufacture that can scarcely be equalled, and certainly cannot be exceeded, in any part of the world.

We may picture the territory of the United States as having three natural divisions. There is a vast region of mountains and high grounds, the *Pacific Highland*, on the west; the *Atlantic Highland*, with its coast plain, on the east; and between them is spread the great *Central Plain*, which forms the basin of the mighty Mississippi River.

The Pacific Highland, forming the western half of the United States, includes the Rocky Mountains, which are the "backbone" and chief watershed of North America. Five of the largest rivers of the States take their rise in these lofty heights, besides numerous smaller streams that sweep eastward to the Mississippi, or its tributary stream the Missouri.


THE UNITED STATES
DOMINION OF CANADA
ATLANTIC OCEAN
PACIFIC OCEAN
GULF OF MEXICO
MEXICO
ALASKA
ARCTIC OCEAN
DOM. OF CANADA
Mt. St. Elias
Behring Sea
Behring Str.
Norton S.
Bristol B.
Aleutian Is.
Rocky Mountains
Mississippi Valley
The Great Plains
The Great Plateau
Utah Plateau
Colorado Plateau
Columbia Plain
Cascade Range
Coast Range
Sierra Nevada
Pacific Highland
Mt. Whitney
Appalachian Mts.
Allegheny Mts.
Blue Ridge
Cumberland Mts.
Atlantic Highland
White Mts.
Adirondack Mts.
Catskill Mts.
Jan de Fuca Strait
Columbia R.
C. Blanco
C. Mendocino
B. of San Francisco
San Francisco
Conception Pt.
Sacramento
Gt. Salt Lake
Gt. Salt Lake City
Denver
St. Paul
Milwaukee
Chicago
Cincinnati
St. Louis
New Orleans
Galveston
Charleston
Washington
Baltimore
Philadelphia
New-York
New-York B.
Delaware B.
Chesapeake B.
C. Hatteras
C. Cod
Massachusetts Bay
Long I. Sound
C. Florida
C. Sable
Savannah R.
Alabama R.
R. Mississippi
Delta of the Mississippi
R. Missouri
Yellowstone R.
Platte R.
Kansas R.
Arkansas R.
Red R.
Ohio R.
Colorado R.
Rio Grande
L. Superior
L. Michigan
L. Huron
L. Erie
L. Ontario
L. Champlain
L. Itasca
Susquehanna
Delaware
Potomac
NORTHERN PACIFIC RY.
CENTRAL PACIFIC RY.
SOUTHERN PACIFIC RY.
GRAND TRUNK RY.
ST. LOUIS & SAN FRANCISCO RY.

The Central Plain, or Mississippi Valley, occupies about half the whole area of the United States. It is a region of great fertility, sloping gently from both sides to the river. So gentle, indeed, is the slope, that from the great river, "the Father of Waters", one may travel for a thousand miles or so westward without meeting with any considerable hill on the way. Through this valley the mighty river flows from north to south for three thousand miles; or, if we reckon from the source of its great tributary the Missouri, the course is over four thousand miles.

The Mississippi itself rises almost on the northern border of the United States, in an elevation called "the Height of Land", but receives its chief tributaries from the melting snows of the Rocky Mountains. These tributaries, sweeping through the wide prairies towards the main stream, form natural highways for commerce in the very heart of the continent. Instead of pouring into the Gulf of Mexico by one vast current, the mouth of the Mississippi consists of many branches, which run through low swamps and islands, formed of the mud brought down from the interior.

The eastern side of the Mississippi Valley is bounded by the *Appalachian Mountains* of the Atlantic Highland. These mountains consist of many ranges, most of them parallel to the coast and to each other. Between them and the ocean is the *Atlantic Plain*, the district in which European people first settled in the country, and in which the great trading-centres and seaports of the eastern seaboard, such as New York and Boston, are situated.

Over so wide an area as the United States the climate is naturally various. In the northern districts summer is hot and winter severe, more severe than in Britain. In the south the heat as of Southern Europe prevails, and winters are short and mild. The western coast has a climate like that of the Mediterranean.

If we then picture a compact country, well-nigh as large as Europe, and extending from the Atlantic on the east to the Pacific on the west, with a coast-line of 13,200 miles, as well as 3620 miles of shores along the great lakes; with a series of magnificent rivers forming highways of commerce through the very heart of the land; if we picture such a country possessed of a climate which is almost everywhere suitable for Europeans, though much more extreme than the climate of Britain, a country habitable over nearly the whole of its surface and capable of supporting a population far beyond its present 72,000,000, such a country is the United States of America.

18. THE UNITED STATES.—II

With their wide and magnificently-watered tracts of rich lands there is no wonder that agriculture is the chief industry of the American people. There are hundreds of thousands of square miles of wheat-lands, and lands for maize, cotton, tobacco, and other produce, besides splendid fruit-lands, and enormous forests of valuable timber.

The great wheat-plains of the United States, especially in the northern portion of the Mississippi Valley, have long made this country one of the granaries of the world. In the long hot summers of the south-eastern and middle states, maize or indian corn is largely grown, and rice in the well-watered regions of the Carolinas, Georgia, Alabama, Mississippi, Louisiana, and Florida. These rice regions, with Virginia, Kentucky, Tennessee, Arkansas, Missouri, and some neighbouring states, are also celebrated for their tobacco. Louisiana is a great sugar-cane state.

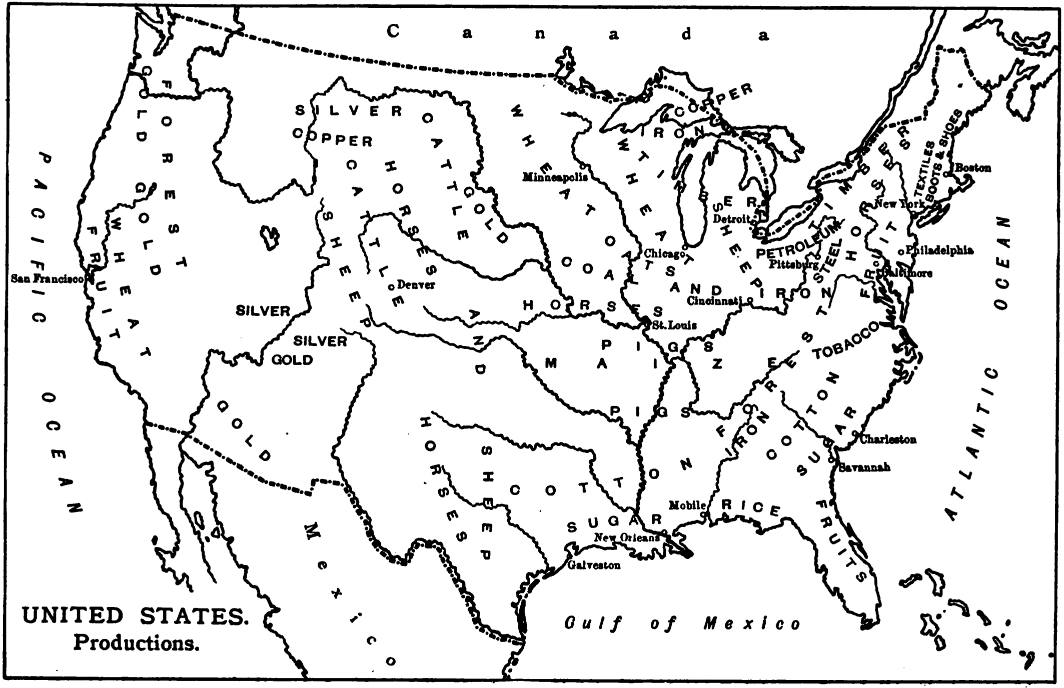
But a far more important crop than tobacco or sugar is cotton, which is grown in the states bordering on the Gulf of Mexico, and in the southern Atlantic states. Texas, Georgia, Mississippi, and Alabama stand first in order of their production of cotton, a large proportion of which finds its way to the mills and factories of Lancashire.

When we come to fruits, we find that parts of the United States are as fruitful and luxuriant as the most fertile parts of Italy, that the grape grows well through all the southern states from the Atlantic to the Pacific, while on the western slopes of the Rocky Mountains the vine flourishes luxuriantly through the whole length of California.

"For fruit," says a writer, "lower California seems destined to be the orchard of the world. Grapes, oranges, melons, apricots, peaches, plums, pomegranates, lemons, citrons, figs, walnuts, olives, and I know not what all besides, flourish amazingly."

The cultivation of oranges, lemons, and citrons is also a great success in Florida, the south-eastern peninsula on the Atlantic side.

Cattle and horses, sheep and pigs, must be reck-



UNITED STATES.
Productions.

oned as a part of the United States agricultural produce. And this is what one might have looked for; for where the countless herds of buffaloes used to wander over the wide prairie lands, and where pigs and horses that had escaped from the early settlers had grown and multiplied, there was evidently an excellent land for the stock-farmer.

So it has proved to be. The farmers of the States years ago secured good stock cattle from the mother-country, the descendants of which are now being returned dead and alive in thousands every week. The hills and lower mountain-slopes are covered with innumerable sheep, the valleys and wide flat prairie lands feed untold herds of cattle and horses and pigs.

Far more pigs are reared in the States than in any other country of the world; and the export of bacon and hams to Britain and other lands is now something enormous.

And with all this splendid agricultural resource the United States is rich in minerals: gold, silver, copper, lead, and, above all, coal and iron abound. The mineral wealth indeed is very great. The gold and silver mines of California, Colorado, Nevada, and Montana place the United States among the chief producers of the precious metals. The coal of the States would alone make a nation rich; for the coal-fields cover an area of no less than 200,000 square miles, or twenty times the area of the British coal-fields. Iron-ore exists in vast quantities, of which full use is being made at Pittsburg and elsewhere in the production of pig-iron and steel. Copper, lead, zinc, and quicksilver occur in sufficient abundance to amply repay mining.

The oil-wells of Pennsylvania and other parts are famous the world over for their productiveness. They are at present the chief source of supply to Britain of this most valuable fuel, petroleum, the use of which is steadily increasing as oil-engines are introduced for factories, motor-cars, ships' engines, and other purposes. A refined form of petroleum is known to us all as the oil burned in our lamps, instead of the more expensive paraffin-oil. Pittsburg is a chief centre of the oil industry, and is itself lighted by natural gas from the oil-wells, while the engines of its factories use the oil and natural gas as their sole fuel.

The industrial progress of the United States exhibits the marvellous results obtained by energy of mind and body applied in a land of great natural resources. Not content to remain a purely agricultural community, the people of the States have developed their mines, and besides exporting their raw material they themselves engage in manufacturing on a large scale. American machinery now competes with British, and we in Britain are indebted to the States for many an article of cunning device which we could not, or do not, ourselves produce. In railway construction too, the States have developed in a wonderful way.

Not content with the marvellous system of natural waterways which reaches the very heart of the country and ramifies in all directions, the Americans have added to their means of inland transit a railway-system extending over no less than 184,000 miles; nearly half the railway mileage of the world, enough permanent railway to go more than seven times round the world. This alone gives evidence of the enormous traffic that is carried on within the States; for, what with rivers and canals and lakes and this gigantic railway-system, the means of conveyance of merchandise is not equalled anywhere, except possibly in Britain itself.

19. CANADA.—I

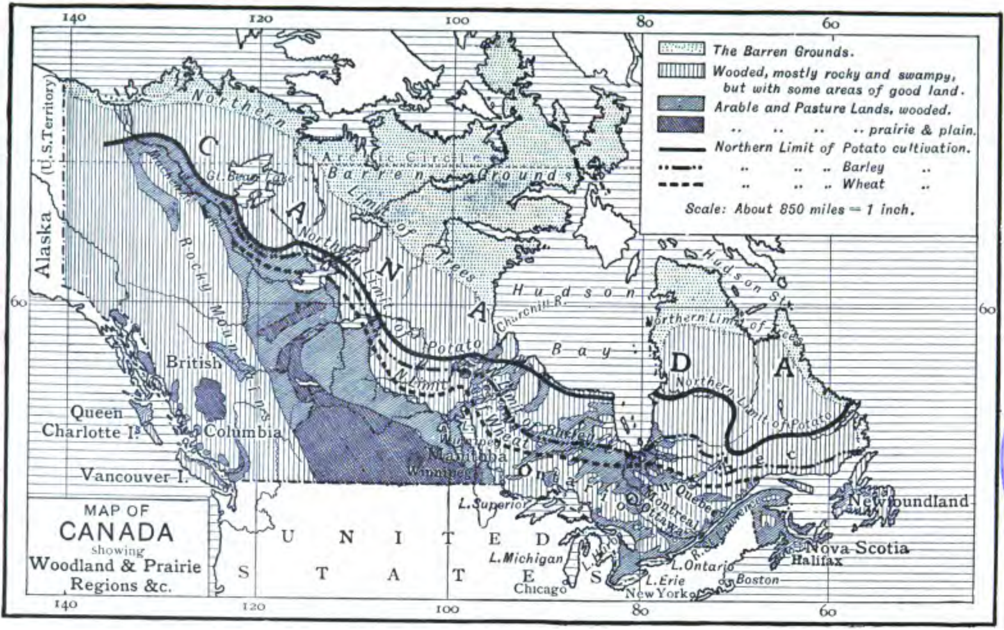
The British possessions in America are of very great extent and importance, being nearly a third of all the territories that make up the British Empire.

Of these the Dominion of Canada is by far the greatest, occupying as it does an area little short of the extent of Europe; Canada comprising 3,500,000 square miles, and Europe 3,800,000.

Next in importance to Canada among our American possessions are Newfoundland with Labrador, and the British West India Islands, including Jamaica, Trinidad, Barbados, and others. In Central America is British Honduras, and in South America, British Guiana.

The Dominion of Canada is alone a magnificent possession, being a country of not only vast proportions, but a country richly endowed with those qualities and conditions that become in the hands of an energetic people the source of wealth and power.

The surface of Canada falls naturally into four



MAP OF
CANADA
showing
Woodland & Prairie
Regions &c.

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great divisions: the *Woodland Region* of the east; the *Prairie Region* in the centre; the *Region of Mountains and Woods*, or *Rocky Mountain Division*, in the west; and the *Barren Lands* of the north.

The Woodland Region extends from the Atlantic to Lake Winnipeg, which is almost in the centre of Canada. The older provinces of the Dominion—Ontario, Quebec, Nova Scotia, New Brunswick, and Prince Edward Island—lie in this division. This region is drained by the wonderful chain of lakes which separates Ontario from the United States; and by the river St. Lawrence, which bears their waters to the sea. The Laurentides, a low range of hills forming the watershed between the valley of the St. Lawrence and basin of Hudson Bay, are almost the only highlands of the region.

The Prairie Region, the great corn-growing district, though the smallest division, is of great extent. It reaches from Lake Winnipeg to the Rocky Mountains, and is three-cornered in shape. On the north-east side it is bounded by a wide belt of forest-land, which stretches from the Woodland Region of the east to the northern part of the Rocky Mountains. It is drained by many noble rivers, among which the Saskatchewan is of great importance for inland navigation.

The third great division is very different from the two first. These form together an immense plain, except for the low Laurentide Hills in the east. But on the western border of the Prairie Region the Rocky Mountains rise up from the plain like a great wall, as if to bar the way to the

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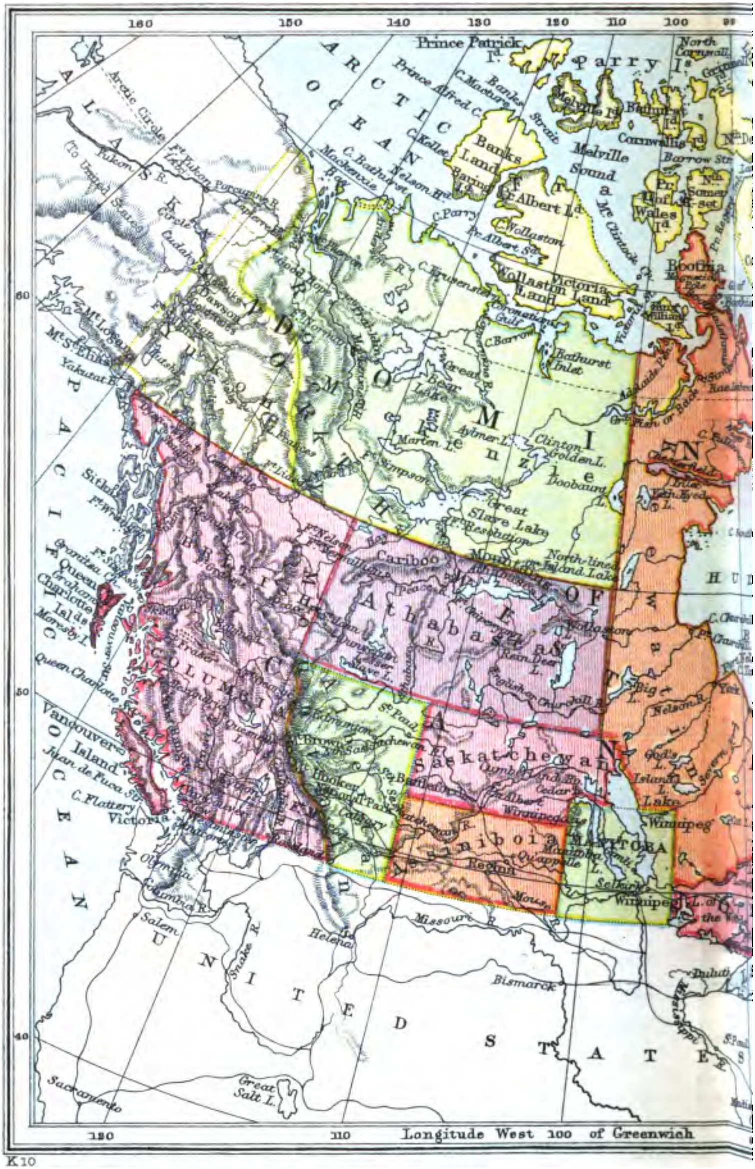
160
150
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ARCTIC OCEAN
ALASKA
Arctic Circle
Yukon R.
(To United States)
Ft. Yukon
Porcupine R.
Circle
Dawson
Mt. Logan
Mt. St. Elias
Yakutat B.
Sitka
Ft. Wrangel
Queen Charlotte Isl.ds
Graham
Moresby I.
Queen Charlotte Sd.
Vancouver Island
Juan de Fuca St.
C. Flattery
Victoria
PACIFIC OCEAN
YUKON
MACKENZIE
DOMINION OF CANADA
BRITISH COLUMBIA
ATHABASCA
ALBERTA
SASKATCHEWAN
ASSINIBOIA
MANITOBA
KEEWATIN
FRANKLIN
Prince Patrick Id.
Parry Is.
Melville Id.
Bathurst Id.
Cornwallis Id.
North Cornwall
Prince Alfred C.
C. Maclure
Banks Strait
Banks Land
Baring Id.
Melville Sound
Pr. Albert Id.
C. Wollaston
Pr. Albert Sd.
Wollaston Land
Victoria Land
Mc Clintock Ch.
Pr. of Wales Id.
Boothia
C. Kellet
C. Bathurst
Mackenzie Bay
Nelson Hd.
C. Parry
C. Krusenstern
Coronation Gulf
C. Barrow
Bathurst Inlet
Great Bear Lake
Aylmer L.
Clinton Golden L.
Doobaunt L.
Great Slave Lake
Ft. Resolution
Ft. Simpson
Marten L.
Adelaide Pen.
Back or Fish R.
Chesterfield Inlet
North-lined Island Lake
Cariboo Mts.
Peace R.
Athabasca L.
Wollaston L.
Rein Deer L.
Churchill R.
Big L.
Nelson R.
York
God's L.
Island L.
Lake Winnipeg
Winnipeg
Cumberland
Cedar L.
Battleford
Ft. Albert
Winnipegosis
Manitoba L.
Qu'appelle
Regina
Selkirk
Saskatchewan R.
Edmonton
St. Paul
Mt. Brown
Mt. Hooker
National Park
Calgary
Fraser R.
Ft. Nelson
Ft. Vermillion
Ft. Liard
Lesser Slave L.
Mt. Stephen
New Westminster
Olympia
Columbia R.
Salem
Helena
Missouri R.
Snake R.
Bismarck
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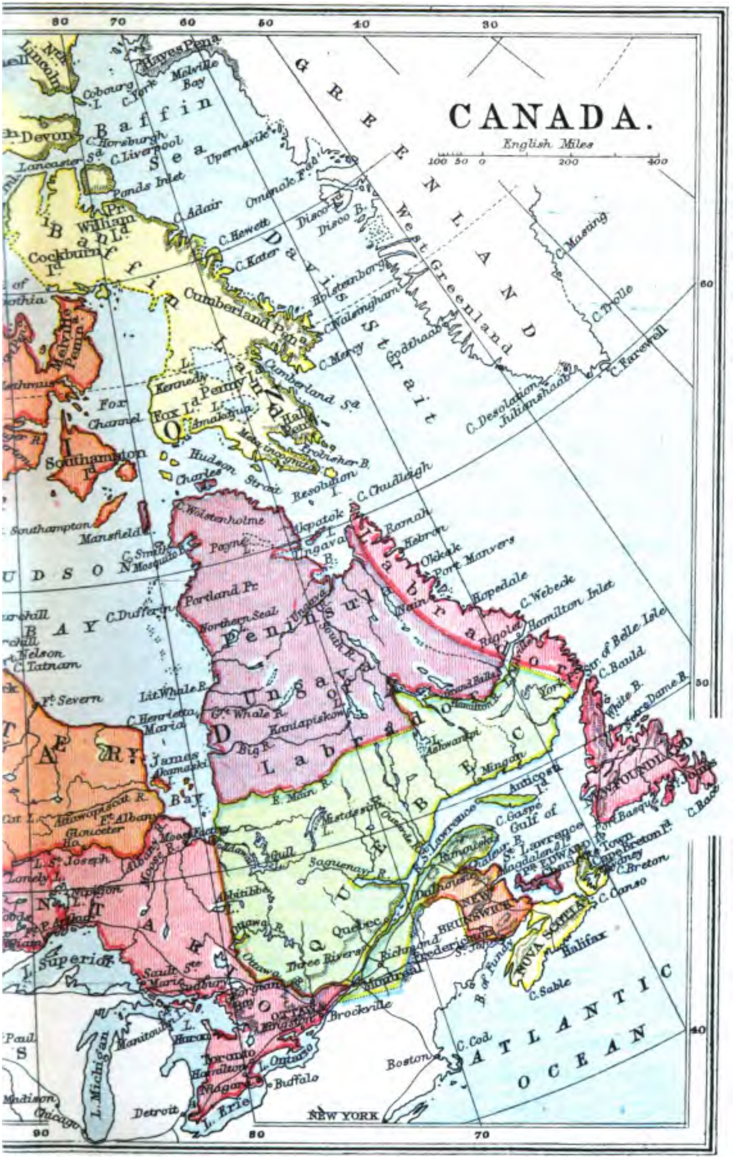

CANADA.

English Miles
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Baffin Sea
GREENLAND
West Greenland
Davis Strait
Baffin Land
Cumberland Pena
Cumberland Sd
Frobisher B.
Hudson Strait
Resolution I.
C. Chudleigh
Melville Pena
Southampton Id
Fox Channel
Fox Ld
Mansfield I.
HUDSON BAY
James Bay
Ungava B.
Ungava Peninsula
Labrador
QUEBEC
Hamilton Inlet
Str. of Belle Isle
NEWFOUNDLAND
C. Race
Anticosti I.
Gulf of St Lawrence
Pr. Edward I.
Cape Breton Id
NEW BRUNSWICK
NOVA SCOTIA
Halifax
C. Sable
B. of Fundy
ATLANTIC OCEAN
C. Cod
Boston
NEW YORK
L. Superior
L. Huron
L. Michigan
L. Erie
L. Ontario
Chicago
Detroit
Buffalo
Toronto
Hamilton
Niagara
Kingston
OTTAWA
Montreal
Brockville
Quebec
Three Rivers
Sherbrooke
Richmond
Fredericton
S. John
ONTARIO
KEEWATIN
C. Farewell
Julianshaab
Godthaab
Holsteinborg
Disco I.
Upernavik
C. Desolation
C. Walsingham
C. Mercy
Cumberland Sd
C. Wolstenholme
Port Manvers
Hopedale
Nain
Hebron
Okkak
Ramah
C. Webeck
C. Bauld
White B.
Notre Dame B.
C. Ray
Port Basque
Cape Breton
C. Canso
Sydney
Charlottetown
Gaspe
Dalhousie
Rimouski
Saguenay R.
Mistassini L.
Abitibbe
Sudbury
Sault Ste Marie
Albany R.
Moose R.
Ft Albany
Ft Severn
C. Henrietta Maria
C. Dufferin
C. Smith
C. Tatnam
Nelson
Churchill
Portland Pt
Mingan
Big R.
E. Main R.
Gt Whale R.
Lit. Whale R.
Kaniapiskow
Payne L.
Akpatok I.
Cockburn Id
Devon
N. Lincoln
Lancaster Sd
Ponds Inlet
C. Adair
C. Hewett
C. Kater
Omenak Fd
C. York
Melville Bay
Hayes Pena
C. Horsburgh
C. Liverpool
C. Farewell
C. Mösting
C. Trolle
Manitoulin I.
Georgian Bay
Madison
Paul
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Pacific. From here to the west coast, throughout the whole province of British Columbia, is a region of rugged, lofty mountains, deep valleys, and raging torrents; the lower slopes of the mountains are clad with dense forests of pine, spruce, and other trees, their highest summits are covered with perpetual snow.

Canada is a splendidly-watered country. The river St. Lawrence and the great lakes connected therewith—lakes Ontario, Erie, Huron, Superior—form an incomparable highway into the interior of the country. Then there are lakes *Winnipeg*, *Athabasca*, the *Great Slave Lake*, *Great Bear Lake*, and others; the noble Saskatchewan River, which continues navigation from Lake Winnipeg to the base of the Rocky Mountains; the Mackenzie River, with its connected lakes, which, including its greatest tributary the Peace River, has a length of 2500 miles, and drains an area of 550,000 square miles.

Over so large a country as Canada, which stretches right to the polar regions, the climate is necessarily varied. But throughout a great part of the territory it may be said to be not unlike that of much of continental Europe. Except in the north, it may be described as temperate, though its winters are colder and its summers hotter than in Europe outside of Russia; much hotter and much colder than in Britain. The atmosphere, however, is dry and exhilarating, and the climate is, in general, healthy.

One effect of the greater heat of the summer months is the rapidity with which the grain and other crops may be sown and gathered. Though wheat is sown later than it is in Scotland, for instance, it is often gathered in before the end of July. But both in soil and climate Canada is well adapted for agriculture.

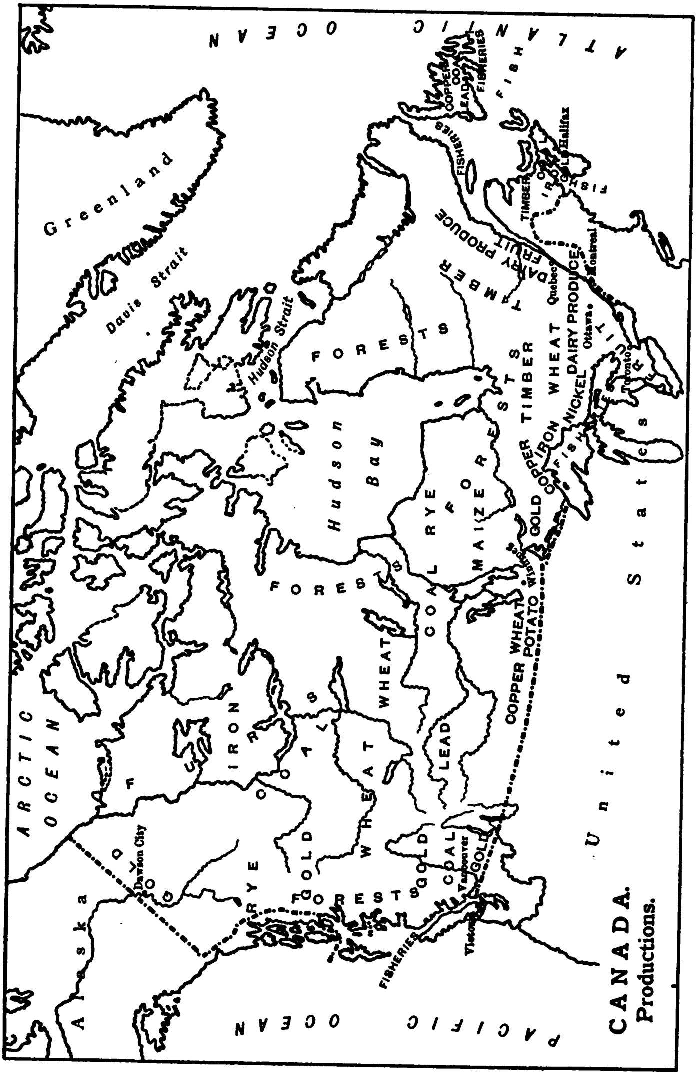
20. CANADA.—II

Canada possesses four chief sources of wealth, namely, her forests, her agriculture, her fisheries, and her minerals. She grows all the ordinary cereals, as well as maize (American corn), and she rears great numbers of cattle, horses, pigs, and sheep, and does a large export trade in cattle and horses, cheese, butter, and bacon, with Britain.

There are immense tracts of land under the plough, which are suitable for wheat, barley, oats, potatoes, or other produce; but there are even greater tracts of prairie, and of valuable and yet unfelled forest, which will some day come under cultivation. There are millions of acres of good wheat lands still waiting for occupation.

Canada is already one of the greatest wheat producers, and will in the future probably be the greatest wheat-growing country in the world. The climate and soil of its boundless prairies are the finest in the world for wheat. Already, notwithstanding the cost of transit to the coast, and from the coast across the Atlantic to Britain, Canadian-grown wheat can be sold in Liverpool or London cheaper than British farmers can profitably sell their home-grown grain.

Britain is yearly depending more and more upon the supply of wheat and flour which it imports from Canada, the United States, and elsewhere, and less



CANADA.
Productions.

upon its home-grown wheat-crops. Our own land is too small to produce all the food required for the people. It is fortunate that the great wheat lands of Canada are under control of our own countrymen, and not under that of a foreign nation.

As a fruit-growing country Canada is specially distinguished for her apples, which are exported in great quantities to Britain. She can also grow peaches, pears, and plums to perfection, while in southern Ontario grapes are grown with success.

The forests of Canada, which are still very extensive, were not so long ago of magnificent proportions. They stretched in an almost unbroken mass from the Atlantic Ocean for 2000 miles westward, that is, to the western extremity of Lake Superior. Here they are bounded by the prairies of the north-west, which continue to the slopes of the Rocky Mountains. Beyond that range is another forest region on the Pacific slopes, where gigantic trees of valuable and durable wood of the pine order abound. Farther north again there is what may be called the sub-arctic forest, which extends right across from the Atlantic to the Pacific, with a width of between 200 and 300 miles. This is not so commercially valuable as the others, being composed of black and white spruce and larch.

Canada is fully alive to the value of its forests, and about one-fourth of the Canadian exports are products of her timbered lands. About one-fifth of her railway and two-fifths of her canal freight is forest produce.

The forests yield a vast variety of woods, such as pine, oak, beech, maple, basswood. These woods are exported largely to the mother-country, to the United States, West Indies, and other parts of the world. But Canada's great forest wealth lies in her pine timber, from which common deal boards are made. This is shipped to Britain in large square logs, and also in the form of planks and boards. Canada also manufactures much of her own timber, and exports it to the United States and Britain in the form of barrel-staves, doors, window-frames, furniture, and other articles.

There are several products beside the actual wood which are yielded by the Canadian forests. There is bark for tanning, an important industry in Canada; resin and turpentine; pearlash or potash, procured by burning the waste of the saw-mills; wood-pulp, which is now being largely used for the making of paper; and we must not forget maple-sugar, the delightful sweetmeat got from the sap of the maple-tree.

21. CANADA.—III

The well-known names of *Nova Scotia Herrings* and *Columbia Salmon* at once suggest the extensive nature of Canadian fisheries. From the eastern coast the sardine, herring, and cod; from the rivers of British Columbia in the west, salmon, which we buy in our shops in the form of *tinned salmon.* The seal-fisheries of Behring Sea supply many rich seal-skins for the London market, but are of little importance compared with the sea-fisheries properly so called.

The Canadian North-west is the land of the fur-trader. Indian and white trappers hunt the beaver, marten, lynx, arctic fox, and other furry animals in that great hunting-ground. Canada has long been known as the chief home of the fur trade.

If Canada is rich in her fields, her forests, her fisheries, and her hunting-grounds, there is an almost limitless store of wealth in her minerals.

Iron of the best quality has been long known to exist in great abundance in Quebec, Ontario, and British Columbia. In North Minnesota, in the States, there is an extensive deposit of iron-ore, so rich that it is said now to lead the world's production. It is thought that this rich deposit extends through a considerable part of Ontario province as well. It is now even asserted that iron-ores may be found wherever searched for throughout almost the whole area of the dominion. So there is the possibility of Canada becoming in the future a great iron-producing, and perhaps a steel and iron manufacturing, country. It may vie with Britain and the United States in the manufacture of steel rails and engines.

Coal, it is said, exists in Canada in almost as great plenty as in the United States. It is worked in Nova Scotia, in British Columbia, and other parts. But the thousands of square miles of coal-bearing strata in the North-west Territory are still untapped. Her output of nearly four milllion of tons a year makes Canada a good second to New South Wales (Australia) among colonial coal-producers.

Canada is also rich in gold. It is mined in British Columbia in the west, and in Nova Scotia in the east, and it is now extensively mined in the extreme north-west in the Klondyke district of the Yukon. It is found too in parts of Ontario.

Copper and silver abound in the districts north of Lakes Superior and Huron.

There are, besides, salt, gypsum, phosphate of lime, slate, asbestos, plumbago, antimony, &c. And one other important mineral, namely nickel, is found in Ontario; indeed Sudbury, in that province, is becoming world-famous for that metal, as there is only one other place in the world (New Caledonia) where it is at present found in large quantities. Nickel is extensively used for bicycles, &c., and forms a most valuable combination with steel, now much used in ship-building.

The inland trade of Canada has been much advanced by the construction of railways, and by the connecting of the numerous lakes and navigable rivers by a great system of canals. The Canadian Pacific Railway runs across the whole continent, from Montreal in the east to Vancouver on the extreme west of the Pacific shore, a distance of 2900 miles. The Grand Trunk Railway is the chief line of the eastern part. But one may believe that the railway-system of Canada is as yet nothing to what it will be.

22. OTHER BRITISH COLONIES IN AMERICA

The island of Newfoundland is about one-third larger than Ireland (Ireland containing some 32,000 square miles and Newfoundland 42,000). It has an extremely indented coast-line. The interior is much cut up with rivers and lakes; some parts of it are barren, but it is not the uninhabitable country that it was at one time supposed to be. There is a prospect of much of its area being brought under cultivation.

Though the winter in this island is long, severe, and damp, and the summer short, hot, and dry, yet the climate is proved by experience to be a healthy one. Such crops as are produced are particularly remunerative, especially potatoes. Grain crops thrive well in places, and wheat has been known to yield well. But both climate and soil are more favourable to pasturage and green crops than to grain. So, as dairy-farming is being introduced, agriculture is sure to make good headway, especially if railways are extended through the island.

But Newfoundland is chiefly distinguished for its fisheries, which are carried on over the celebrated fishing-banks around the island. These banks or shallows in the sea abound in a great variety of fish, particularly cod, which have for long been a large article of export from the island in the form of dried fish; and we must not forget the well-known "cod-liver oil", a product of the fishing. The produce of the fishing has reached the magnificent sum of £2,000,000 a year.

Minerals are abundant; there are gold, silver, iron, coal, copper, lead, nickel, and gypsum. It is believed in certain quarters that Newfoundland will in the course of a few years become one of the most valuable of our colonies. The recent discoveries of highly-important iron and copper deposits have attracted the attention of capitalists to this country.

The Newfoundland Iron Ore Company have taken a large tract of the mineral-bearing territory in the north-west of the island; and steel manufacturers at home now regard Newfoundland as one of the chief future sources of supply for hematite iron-ore.

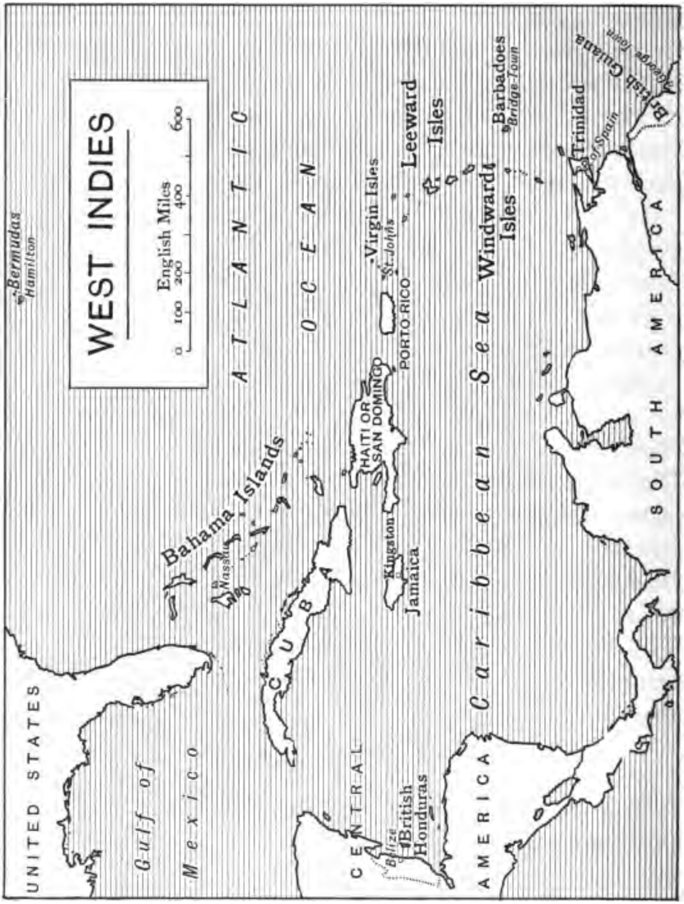
The copper discoveries are almost as valuable as the newly-discovered iron deposits. Indeed they are much richer than was ever anticipated.

In 1880 Newfoundland ranked sixth in the copper production of the globe, but it may ere long possibly take a leading place in the production of this metal. The mines are generally near the coast, so the cost of transit to ships need not be great.

About a thousand miles south of Newfoundland, of which bishopric they form a part, are the *Bermudas*, or *Somers' Islands*. This group of coral islets is about 600 miles from the nearest point of the American continent. Owing to their position the islands enjoy an exceedingly mild climate. They are becoming therefore a favourite holiday and winter resort, especially for the people of the United States. The soil is not fertile, but the islands produce large quantities of early vegetables for the American markets.

THE WEST INDIES

The West India Islands, lying in and bordering the sunny waters of the Gulf of Mexico, are amongst the most favoured of British possessions. Though situated mostly within the tropics, the fierceness of the tropical sun is for them tempered by their surrounding waters, so that, in general, the climate is delightful.


WEST INDIES
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Bermudas
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UNITED STATES
Gulf of
Mexico
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OCEAN
Bahama Islands
Nassau
CUBA
HAITI OR SAN DOMINGO
PORTO RICO
Virgin Isles
St. Johns
Leeward
Isles
Windward
Isles
Barbadoes
Bridge-Town
Trinidad
Port of Spain
British Guiana
George Town
Kingston
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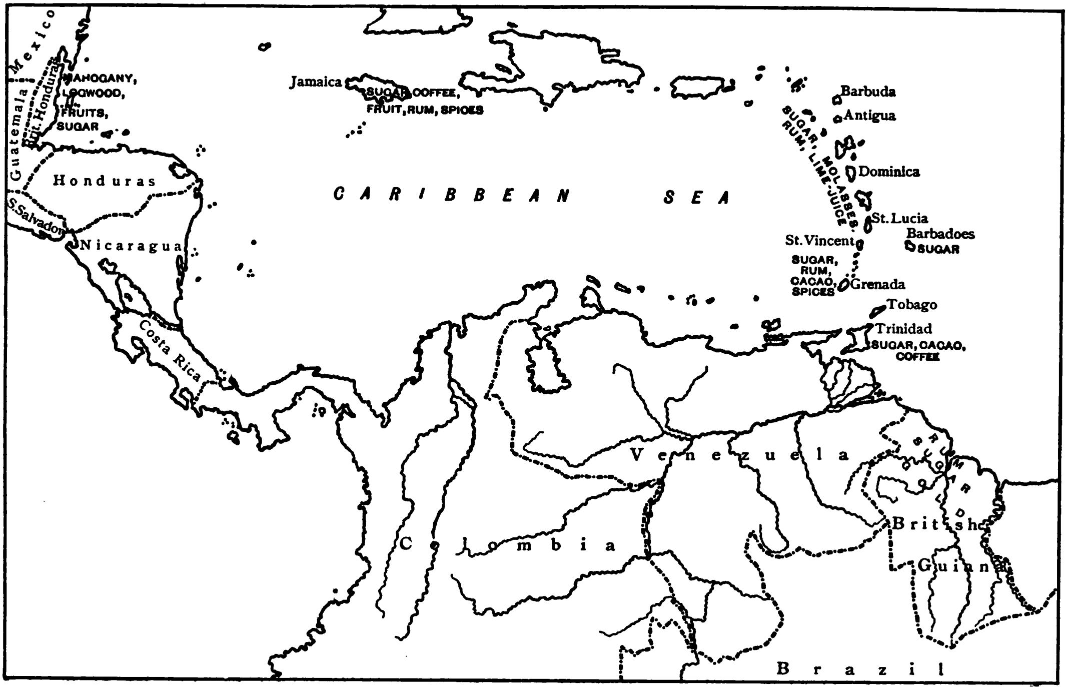
Belize
SOUTH AMERICA



West Indies and British Guiana—Productions

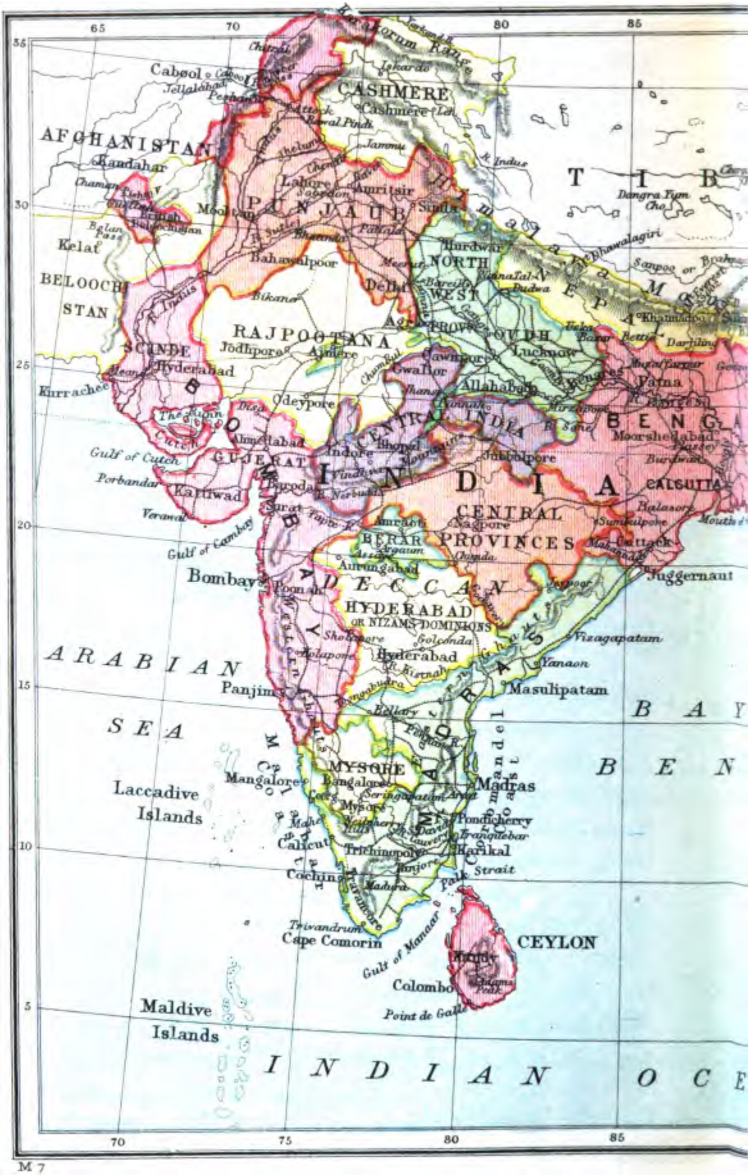
The fertile land, stimulated by the warm sunshine and plentiful moisture, produces fruits, vegetables, and flowers in profusion. Terrible hurricanes, however, are not uncommon.

The *Bahamas* are flat coral islands whose waters produce sponges and turtles; but nearly all the others are mountainous. The higher grounds are covered with thick forests, which yield valuable dye-stuffs and some of the more highly-prized kinds of cabinet wood.

Cane-sugar and rum have for long been the chief products of the islands, but the competition of beet-root sugar from Germany and France has of recent years seriously injured the West Indian sugar industry, and has led to a great increase in the cultivation of fruits. Pine-apples, bananas, oranges, cocoa, coffee, maize, and tobacco are largely grown for export. Much of the trade is with the United States, to which sugar, early vegetables, and fruit are sent.

Jamaica, the largest of the British West Indian Islands, is some 140 miles long. It is a mountainous island, with lovely valleys and abounding in streams. Sugar and rum are now less important exports than fruit, dyewoods, and coffee. Tobacco is cultivated and cigars are made. The island possesses good roads and a considerable mileage of railway.

Trinidad is another fine island, not so large as Jamaica but exceedingly fertile, and having a trade equally large. Its chief exports are sugar, cocoa, and asphalt or mineral pitch. The last is obtained from the famous pitch lake of Trinidad, in which fresh supplies are constantly bubbling up.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Bolan Pass
Kelat
BELOOCHISTAN
R. Indus
Jhelum
Chenab
Ravi
Lahore
Amritsir
Sobraon
PUNJAUB
Mooltan
Sutlej
Bhatinda
Patiala
Simla
Bahawalpoor
Meerut
Delhi
Hurdwar
NORTH WEST PROVINCES
Bareilly
Naina Tal
Budwa
Agra
Bikaner
RAJPOOTANA
Jodhpore
Ajmere
SCINDE
Hyderabad
Meanee
Kurrachee
The Runn of Cutch
Cutch
Gulf of Cutch
Porbandar
Kattiwad
Veraval
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Odeypore
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GUJERAT
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Dhawalagiri
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Mt. Everest
Khatmandoo
Sikkim
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Moorshedabad
Plassey
Burdwan
CALCUTTA
Balasore
Mouths of the Ganges
Sumbulpore
Cuttack
Mahanadi
Juggernaut
CENTRAL PROVINCES
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Chanda
Amraoti
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Assaye
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DECCAN
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Golconda
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Masulipatam
Eastern Ghauts
MADRAS
Coromandel Coast
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Seringapatam
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Western Ghauts
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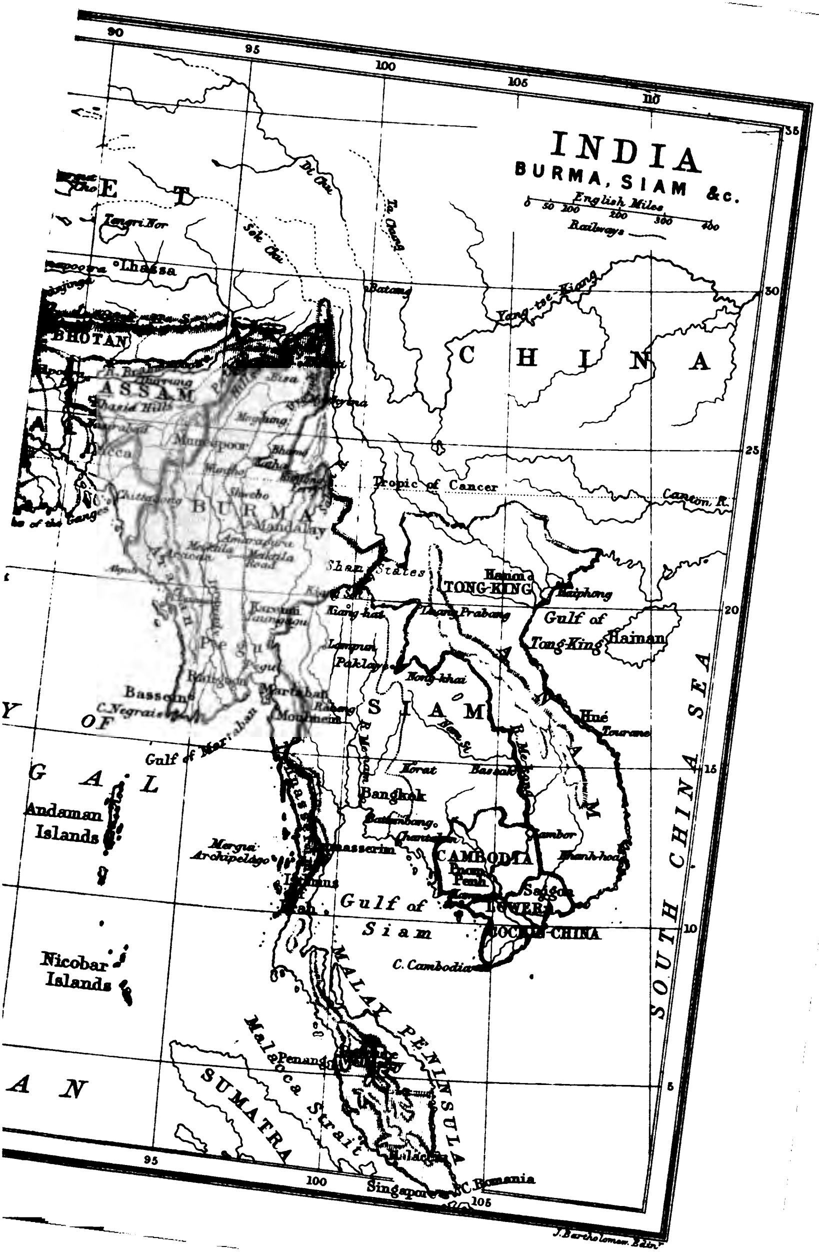
Neilgherry Hills
St. David
Cauvery
Pondicherry
Tranquebar
Calicut
Trichinopoly
Tanjore
Karikal
Cochin
Madura
Travancore
Palk Strait
Trivandrum
Cape Comorin
Gulf of Manaar
CEYLON
Kandy
Adams Peak
Colombo
Point de Galle
ARABIAN SEA
Laccadive Islands
Maldive Islands
INDIAN OCEAN
BAY OF BENGAL


INDIA
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BHOTAN
ASSAM
Khasia Hills
Munnipoor
Bhamo
Mandalay
Shwebo
BURMA
Chittagong
Amarapura
Meiktila
Arracan
Akyab
Shan States
Prome
Toungoo
Pegu
Rangoon
Bassein
C. Negrais
Martaban
Moulmein
Gulf of Martaban
BAY OF BENGAL
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Mergui Archipelago
Tenasserim
Nicobar Islands
Tropic of Cancer
Canton R.
Hanoi
TONG-KING
Haiphong
Gulf of Tong-King
Hainan
Luang Prabang
Kiang-hai
Lampun
Paklay
Nong-khai
SIAM
ANAM
Hué
Tourane
R. Menam
R. Mekong
Korat
Bassak
Bangkok
Battambang
Chantabun
CAMBODIA
Pnom Penh
Saigon
LOWER COCHIN-CHINA
C. Cambodia
Gulf of Siam
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MALAY PENINSULA
Isthmus of Krah
Penang
Malacca Strait
SUMATRA
Malacca
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J. Bartholomew, Edin.r

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CALIFORNIA

British Honduras, in Central America, on the shores of the Gulf of Mexico, is one of the chief sources of supply of mahogany timber and logwood. It also grows cocoa-nuts and bananas for the United States market.

British Guiana, on the north of South America, still remains a great sugar land, some eighty per cent of its exports consisting of this commodity. It possesses valuable gold-bearing territory, and yields considerable quantities of the precious metal. It is still a largely undeveloped country.

Indeed, the West Indies as a whole are far from being fully developed. In days to come they will contribute much more to the general wealth of mankind than they do at present.

23. INDIA

The British Indian Empire comprises the great central peninsula of southern Asia, Burmah, Ceylon, and many smaller scattered islands. The peninsular portion, or India proper, is separated from the rest of Asia chiefly by the almost impassable ranges of the Himalayas, forming a grand mountain barrier on the north.

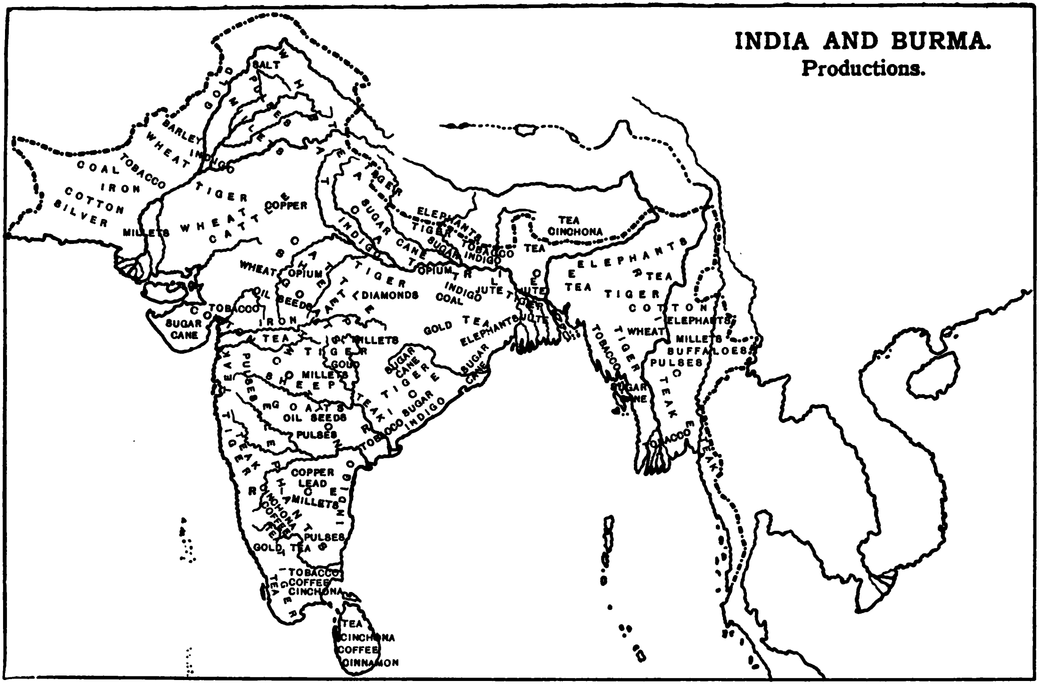
The whole of our Indian possessions embrace an area of no less than 1,800,000 square miles (or nearly half the size of Europe, which is 3,800,000), and a population, including that of Burmah, of over 300,000,000 (seven and a half times the population of the British Isles).

India, as one might suppose, from its great size and its diversified surface, has great diversity of climate, but there is generally a hot, a cool, and a rainy season. In the south of the peninsula, and in Ceylon, the climate is, of course, tropical, and the heat is very great. The summer heat is great, indeed, almost everywhere. The central and southern plains, especially in summer, are sultry, unhealthy, and in part barren. Many districts are apt to suffer from want of rain, and hence famine may prevail over large areas. Cultivation can only be carried on in many places by means of irrigation. In the Himalayas a temperate climate, and higher up an Alpine climate, prevails. India is watered by the noble rivers Ganges, Brahmapootra, and Indus, with their tributaries, besides many smaller streams. In the hot season many of the smaller streams run dry.

With its great variation in climate it is not surprising to find a corresponding variety in the vegetable and animal products of India. Thus, wheat, barley, and other European vegetables are grown in the north and north-west, while cotton, jute, tobacco, rice, indigo, sugar-cane, cocoa-nut, date, and other palms, and spices are also important products.

Tea, coffee, chinchona, and other useful plants have been comparatively recently introduced, and already tea is a staple product of Assam, Ceylon, and other parts of India. Indeed Britain gets some five-sixths of her whole supply of tea from India and Ceylon.

European fruits abound in many parts; and among the native and cultivated fruits are the citron, pomegranate, plantain, mango, lime, orange, pine-apple,



INDIA AND BURMA.

Productions.

almond, and fig. There are also vast forests of teak, banyan, bamboo, and other useful woods.

The wild animals and birds of India make a long list, from boars and bears and elephants, lions (now rare) and tigers, down to cats and rats and mice. The domestic animals are oxen, sheep, camels, elephants, horses, mules, and goats. Snakes and other reptiles are common, and are very destructive to human life.

India was long ago celebrated for its mineral treasures: gold, silver, copper, iron, salt, diamonds, and other precious stones; but the mines of India have never been worked in anything but a poor and ineffectual way under native rulers. Under British rule coal-mining has made considerable progress, and now employs 60,000 persons. Gold-mines are also actively worked.

There are over 20,000 miles of railway in India, a mileage which for the size of the country is not nearly what it ought to be. India is fifteen times as large as the British Isles, and yet Britain has as great a mileage of railway. There are canals and many natural waterways in India, beside the railways; but much more will yet have to be done to extend means of transport and communication. With such extension, and with waste land reclaimed, India with her vast population has almost unlimited possibilities of productive and industrial expansion.

If Beluchistan, North Borneo, and Sarawak, the Straits Settlements and Malay States, Hong-Kong, and our other Asiatic possessions be added to those of India proper, then the area of such possessions is ak,

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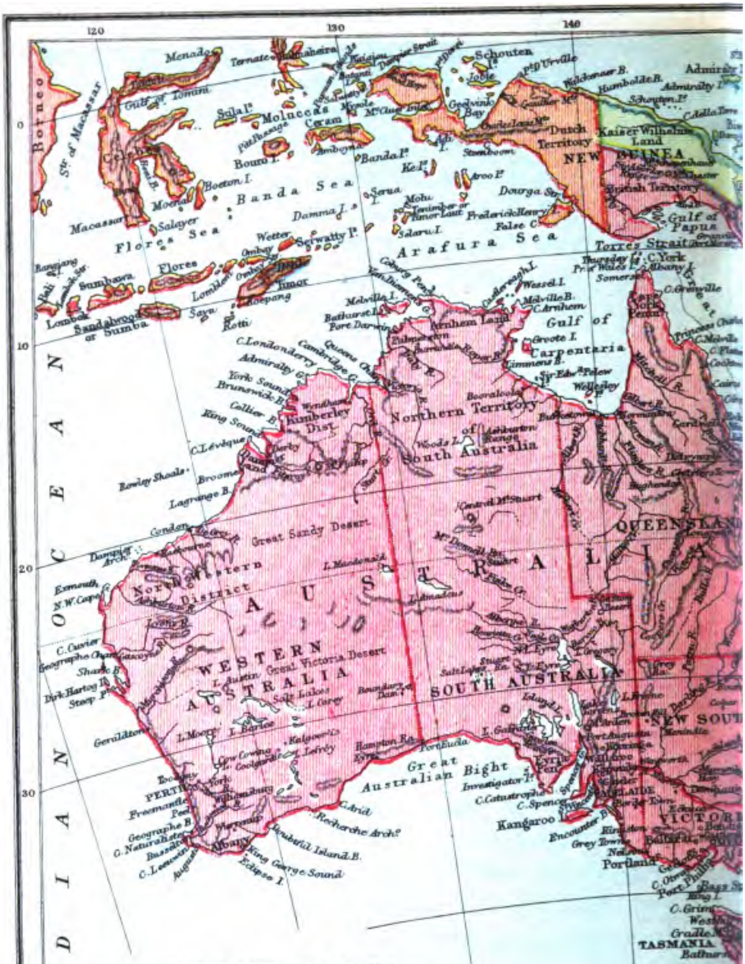

AUSTRALASIA.

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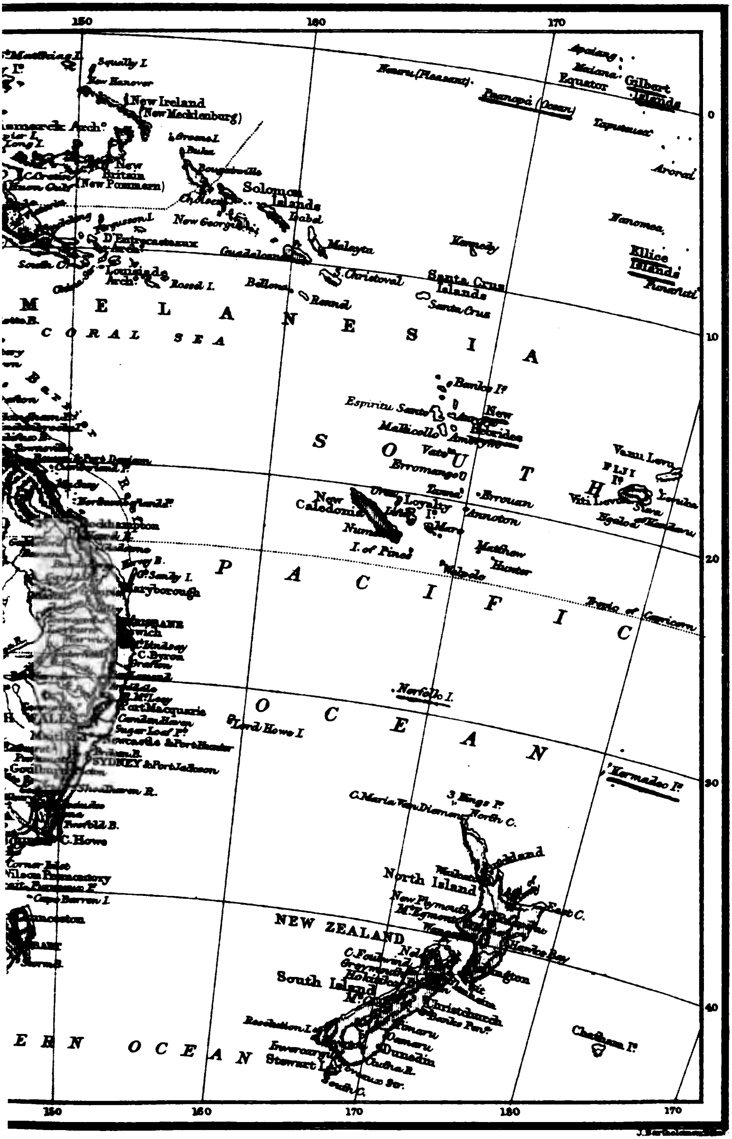

150
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New Hanover
New Ireland
(New Mecklenburg)
Bismarck Arch°
New Britain
(New Pommern)
Solomon Islands
Bougainville
Choiseul
New Georgia
Ysabel
Guadalcanar
Malayta
S. Christoval
Bellona
Rennell
D'Entrecasteaux
Louisiade Arch°
Rossel I.
Ferguson I.
Nauru (Pleasant)
Paanopa (Ocean)
Apaiang
Maiana
Equator
Gilbert Islands
Tapiteuea
Arorai
Nanomea
Ellice Islands
Funafuti
Kennedy
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Banks I^s
Espiritu Santo
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Vanua Levu
FIJI I^s
Viti Levu
Lakemba
Kandavu
New Caledonia
Loyalty I^s
Noumea
I. of Pines
Mare
Matthew
Hunter
Walpole
Tropic of Capricorn
Rockhampton
Maryborough
Gt. Sandy I.
BRISBANE
Ipswich
C. Byron
Grafton
Port Macquarie
Camden Haven
Sugar Loaf P^t
Newcastle & Port Hunter
SYDNEY & Port Jackson
Goulburn
Shoalhaven R.
Twofold B.
C. Howe
Corner Inlet
Wilson Promontory
Cape Barren I.
Launceston
HOBART
Lord Howe I.
Norfolk I.
Kermadec I^s
3 Kings I^s
C. Maria Van Diemen
North C.
Auckland
North Island
New Plymouth
M^t Egmont
East C.
Hawke Bay
NEW ZEALAND
Nelson
Wellington
C. Foulwind
Greymouth
Hokitika
South Island
Christchurch
Banks Pen^a
Timaru
Oamaru
Dunedin
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about 2,000,000 square miles, or fully half the size of all Europe; and the population in Asia under our control considerably exceeds 300,000,000.

24. AUSTRALASIA—I

The Australasian posssessions of Great Britain consist of the island of Australia (the largest island in the world), the island of Tasmania on the south, the islands of New Zealand on the south-east of Australia, the south-eastern portion of the island of New Guinea, the Fiji Islands, the Solomon Islands, with other groups and islands scattered through the Pacific Ocean.

The whole of our Australasian possessions have an estimated area of 3,200,000 square miles; only about one-sixth less than the whole of Europe, with a population of only some 5,000,000.

AUSTRALIA (1)

Australia, which used to be called New Holland, and is well styled a sea-girt continent, lies between the Indian and the Pacific Oceans. It alone possesses an area of 2,946,426 square miles. Its population at present is not great, although it is rapidly increasing, it being now about 3,750,000.

The island is divided into what are at present five distinct colonies: New South Wales, Victoria, Queensland, South Australia, and Western Australia.

Australia is so extensive that its climate is bound to vary considerably. The northern part lies within the tropics, and the southern half within the temperate zone. In the north there are heavy (tropical) rains, but absence of rain is a general characteristic of the climate. It is for the most part a level land, the chief heights being those near the east coast. As a whole, the climate, taking the year through, may be described as hot and dry, though it is healthy. It may seem strange to us in Britain to learn that the Australians get their hot winds from the north (often uncomfortably hot and dry from the interior) and their cold winds from the south, and that their winter occurs in June, July, and August.

Along the coast the country is more or less fertile almost everywhere; but parts of Queensland, New South Wales, Victoria, the extreme southern portion of South Australia, and the western portion of Western Australia can alone be said to be generally fertile.

Many of the rivers in Australia are very fluctuating in volume of water: full-flowing in the rainy seasons, and disappearing altogether, or leaving only pools, in the dry. Parts of Australia still remain to be explored; but, so far as is known, the interior is largely composed of rocky tracts and barren plains, with little or no water.

But Nature often offers a compensation in some other way for what she withholds, when the intelligence of man is equal to the opportunity. It is now found that in dry districts in Queensland the boring of artesian wells has greatly benefited the districts. Water is thus found almost everywhere, which itself flows freely to the surface. No fewer than three hundred and seventy-six wells have, up to the year

1899, been bored, and the united flow is the splendid supply of no less than 215,000,000 of gallons a day. Thus thirsty cattle and sheep are now well supplied, and vegetation flourishes by irrigation, in districts previously barren for want of water.

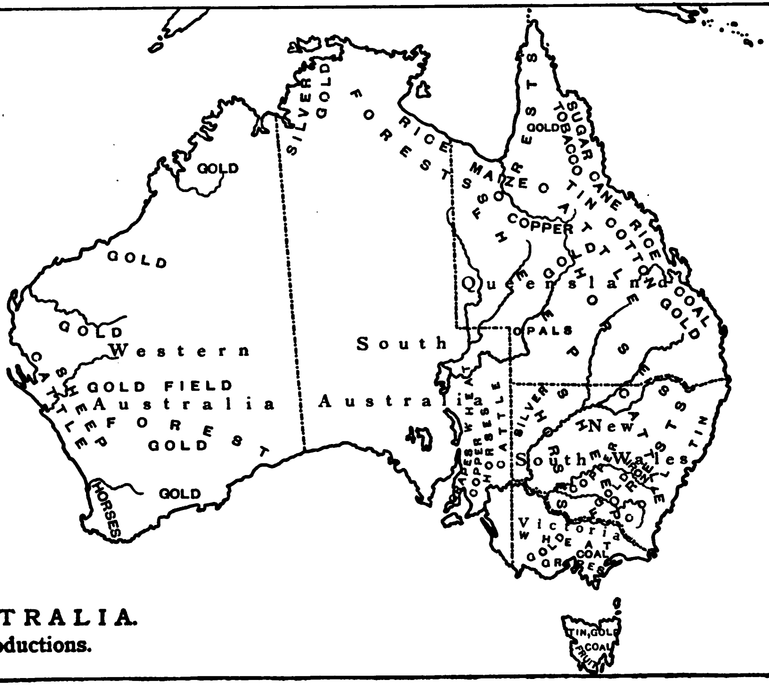
This existence of an underground supply of water is an incalculable boon to Queensland. If the supply is found to be fairly general in the interior of Australia, that alone may make many an at-present-uninhabitable district a source of wealth. Hitherto it has been assumed that owing to the want of water Australia could never be a densely-populated country, except in certain areas.

25. AUSTRALASIA—II

AUSTRALIA (2)

Australia is rich in forest trees, yielding timber of excellent quality. Some of these Australian trees rank among the giants of their kind. Queensland and Western Australia are specially rich in timber. Besides the characteristic Eucalyptus, of which there are more than 140 species, the timber trees include acacias, pines, cedars, the iron-wood, tulip-wood, satin-wood, silky-oak, and many other varieties greatly esteemed for cabinet work.

Australia is particularly rich in minerals. There exist extensive deposits of gold and silver, coal and iron, copper, tin, lead, zinc, antimony, mercury, plumbago, beside diamonds, rubies, and other precious stones. In gold-mining, Australia ranks with South Africa and the United States, the three



AUSTRALIA.

Productions.

great gold-producers of the world. The Coolgardie district in Western Australia is a famous centre of the gold-mining. Australia is also now producing much coal from the mines of New South Wales.

Australia is the greatest sheep-rearing and wool-producing country of the world. In addition to the mountain ranges of the south and east, there are vast plains and downs covered with grass, highly suitable for sheep, and now the feeding-ground of innumerable flocks. In the rearing of cattle and horses Australia also ranks with the States and Canada. Camels have been introduced successfully as beasts of burden.

Oranges and many other fruit, the sugar-cane, maize, and cotton are grown with success. The growing of grapes for wine-making is an important industry.

Railways are being rapidly extended; there are some 10,000 miles of line in actual use, with some 70,000 miles of telegraph. But the Australian colonies are still young, British occupation of the island extending back only a little beyond a hundred years.

TASMANIA

Tasmania, the original European name of which was Van Diemen's Land, is situated fully 100 miles south of the mainland of Australia. It embraces an area (including several smaller islands) of 26,215 square miles.

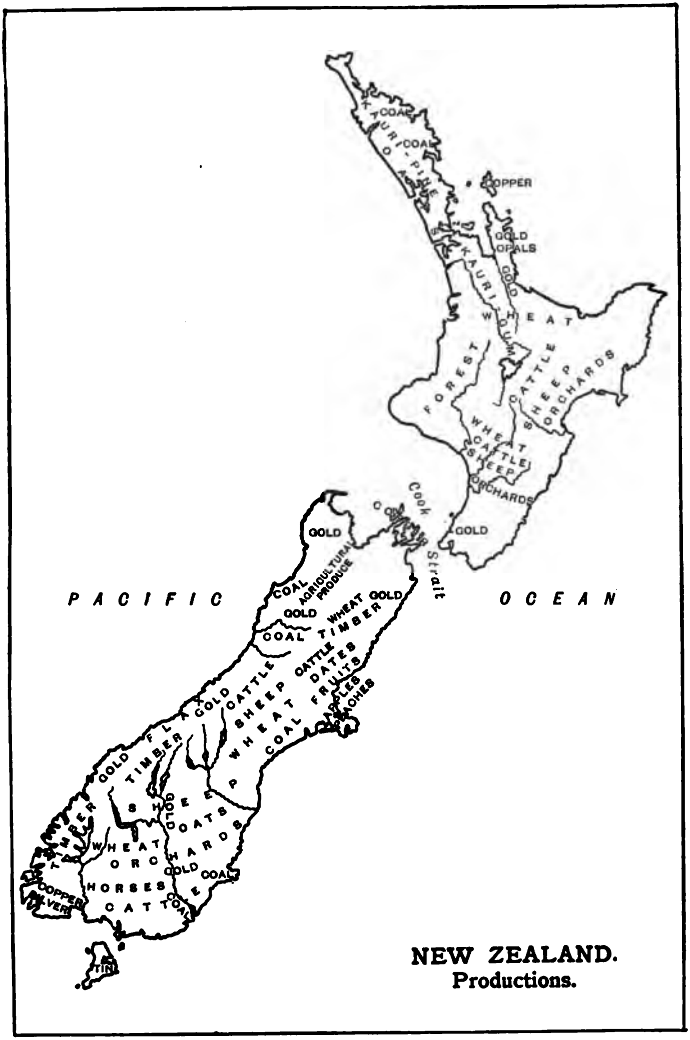
The surface is greatly diversified, consisting for the most part of a succession of hills and valleys, of peaks and glens, presenting almost every conceivable variety of scenery. The valleys are fertile, and there are wide stretches of good agricultural land in many parts of the island. The climate is warmer than that of England. It is remarkably mild, and so healthy that Tasmania has been called the sanatorium of the south. Its forest trees, which include gigantic blue gums and pines, yield valuable timber; and in the mountain gullies tree-ferns of large size are plentiful. Much of its soil is well adapted to cultivation. Wheat, oats, barley, pease, beans, potatoes, and hops are cultivated. The fruits include grapes, cherries, peaches, apricots, plums, quinces, mulberries, walnuts, and filberts. Fruit-preserving is an important industry, and green fruit is largely exported.

Its minerals are gold, silver, coal, copper, iron, tin, slate, and building-stone. In tin it is particularly rich.

Its first railway was opened in 1871, and there are now about 500 miles. As in Australia, the staple export is wool. The population is some 170,000, of whom none belong to the native race, the natives being entirely extinct.

NEW ZEALAND

New Zealand is a group of three islands in the South Pacific Ocean, distinguished as North, South, and Stewart Island, the last being comparatively very small. The group extends to some 105,000 square miles; so they are just a little less in area than the British Isles. They were first colonized by Britain in 1840.



NEW ZEALAND.

Productions.

Both the larger islands are extremely picturesque, being diversified with mountains and lakes, the former covered with splendid forests. The magnificent Kauri pine provides timber largely exported to Britain.

New Zealand has a varied, though a very healthy climate, resembling that of France and Northern Italy, though it is considerably more moist. The soil is excellent, and produces what we know as English crops, fruit, and vegetables to perfection. But some sub-tropical fruits can be grown in some of the valleys. Several of these have been introduced and are thriving.

Much attention is being given to the cultivation of oranges and lemons in the Province of Auckland. The land and the climate are, it is said, exceedingly well adapted for this industry. All over the colony, orchard planting is progressing rapidly, and fruit-growing, including peaches, pears, apples, grapes, &c., promises at no distant time to be a most important New Zealand industry.

Stock-rearing, agriculture, and mining are the chief occupations. As in Australia, sheep-rearing for wool is an important industry. Frozen meat, hides, skins, butter, and cheese, with gold and other minerals, are the principal exports.

The seas abound with fish, some of them of most delicious flavour; and salmon, trout, perch, and other English varieties have been successfully introduced into the rivers.

In minerals, New Zealand is fairly well supplied. Gold is worked in both the larger islands. Coal

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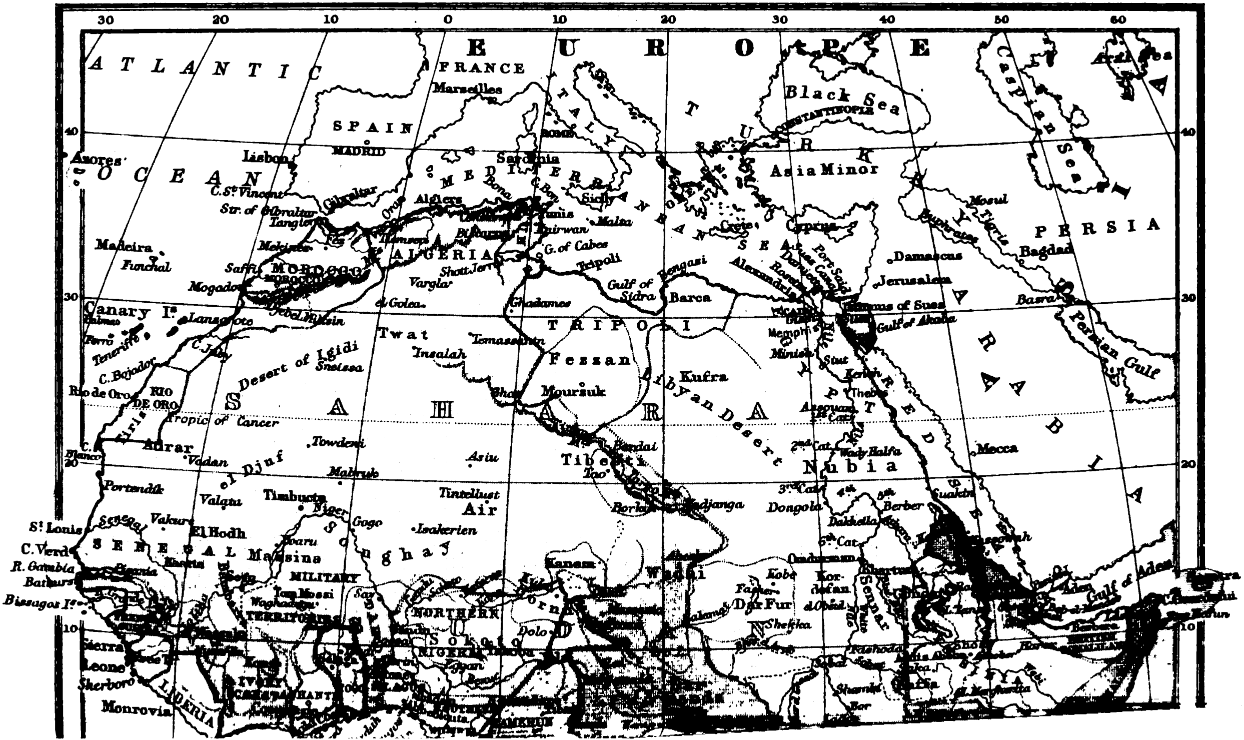
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Mosul
Tigris
Euphrates
PERSIA
Bagdad
Damascus
Jerusalem
Basra
Persian Gulf
ARABIA
Mecca
RED SEA
Isthmus of Suez
Gulf of Akaba
Port Said
Suez Canal
Damietta
Rosetta
Alexandria
CAIRO
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Nile
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Omdurman
Khartum
Sennar
White Nile
Nubia
EGYPT
Libyan Desert
Kufra
Barca
Bengasi
Gulf of Sidra
Tripoli
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Fezzan
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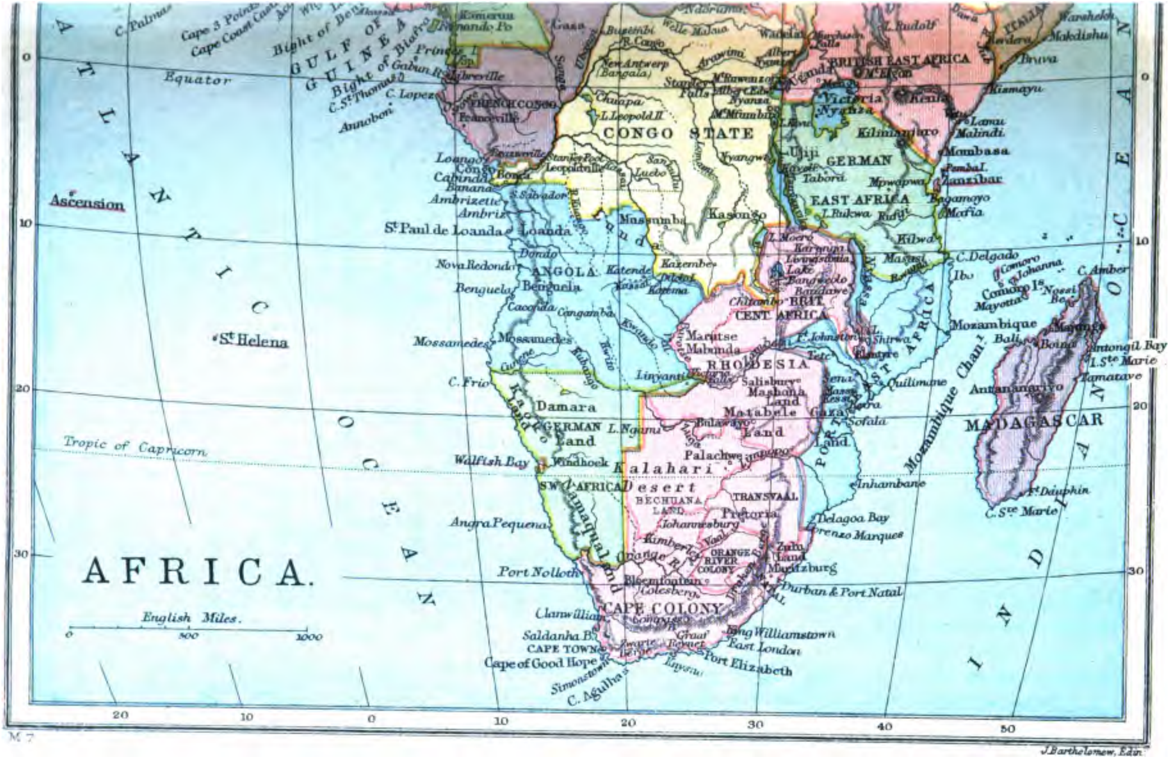

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occurs in many parts, and copper has been worked to some small extent.

The population of the whole colony of New Zealand is some three-quarters of a million, without reckoning the 40,000 belonging to the native or Maori race. There are upwards of 2000 miles of railway.

26. AFRICA

About a third part of the immense continent of Africa, which is three times the size of Europe, and contains 11,500,000 square miles, is either in the possession of the British, or under British protection.

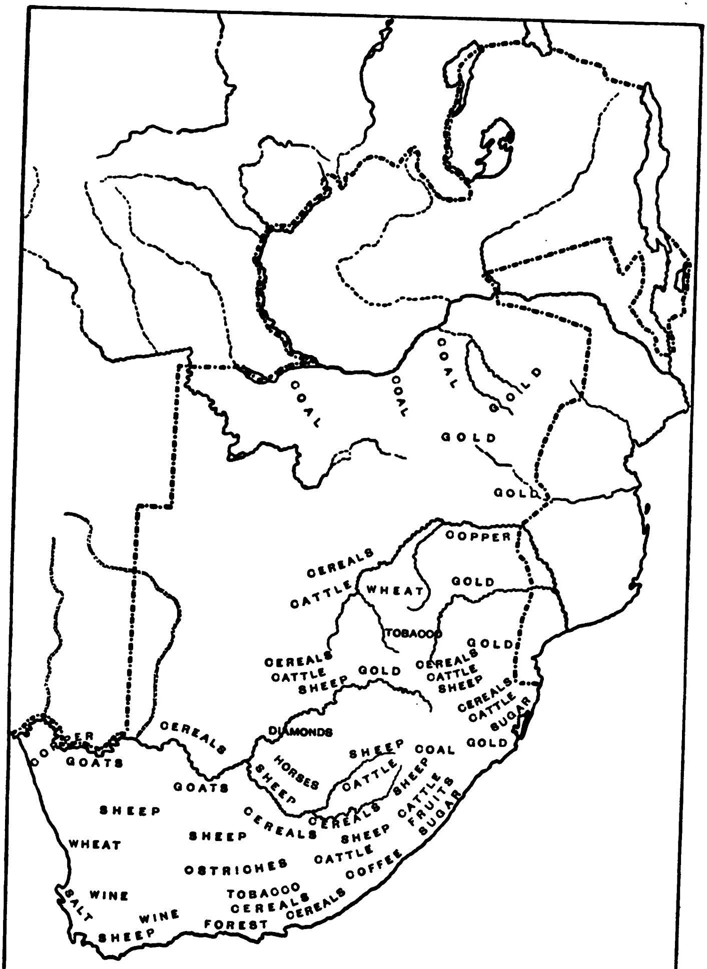
From the north, the historic land of Egypt with the Soudan, under British control, carries us south along the valley of the Nile to the British East African Territory, which stretches to the lakes of Central Africa. Here the lands of German East Africa and of the Congo Free State interpose, but at the south end of Lake Tanganyika we again reach British territory, which extends thence to the southernmost point of Africa, Cape L'Agulhas, that is "the Needles", in the south of Cape Colony.

On the west the Niger Territory and the Gold Coast are among Britain's tropical possessions. As yet these have but slight commercial importance, though supplying us with such products of the tropics as *ivory*, *india-rubber*, *gums*, *spices*, and *hides*.

The colonies of South Africa, particularly *Cape Colony*, *Natal*, *Rhodesia*, the *Orange River Colony*, and the *Transvaal Colony*, are of the first importance as being suitable for British settlement. The coast region of South Africa is low-lying, but not far from the coast the land rises into hills, which, as one passes inland, become considerable mountains. Behind this mountain chain is an inland plateau. In the south this plateau is called the "*Little Karoo*", to distinguish it from a second and more elevated plain running parallel to it but at a considerably greater height. The climate varies with the district. The coast region is generally hot and unhealthy, though Cape Town and Durban are on the whole healthy enough. In the hill-districts the climate is cool, and on the central plateau dry and exceedingly healthy, though hot during the day and often very cold at night.

Want of water is the chief difficulty with which South Africa has to contend. Except on the southern and south-eastern coasts there is everywhere a deficient rainfall. In the dry season many of the rivers become parched courses, with only here and there a low-lying pool of muddy water. The heavy rains of the wet season flood them to the full, and what one week is an empty bed is the next a rolling river. With the rain the country, which has lain thirsty and barren, blooms into life. *Karroo* and *veldt* become luxuriant with rich grasses and various vegetation. "The desert blooms like a rose."

The colonists are largely of Dutch descent, the country having originally been colonized by Holland. There are, however, many British. The British are chiefly in the towns and in the mining districts, the Dutch living on the land as farmers.



BRITISH SOUTH AFRICA.
Productions.

Sheep-rearing, cattle-rearing, and ostrich-farming (for the feathers) are the chief branches of farming which they take up, but fruit-growing is rapidly extending. The colonies are, indeed, blessed with exceedingly fertile land, and wherever there is water rich crops of almost every kind can be grown. At present the chief grain cultivated is maize. In some parts reservoirs have been constructed to retain the water that falls in the wet season, and the results have been most favourable in enabling land to be cultivated that must otherwise have remained barren.

In the Transvaal, as well as in the Orange Territory, there are great stretches of country suited for agriculture—wheat lands, that in the hands of a more energetic race than the Boers would make South Africa one of the world's great wheat-producing countries. At present, though British influence has been extended almost to the equator, the vast plains are only cultivated in patches, and the real agricultural development can scarcely be said to have begun. Even in such exceedingly fertile districts as those of Ladybrand, Wepener, Ficksburg, &c., in the Orange Territory, the methods of cultivation are as a rule very rough and unscientific. Machinery, however, is coming more and more into use; and under English rule, and with the example of English farmers before their eyes, it is to be expected that even the unprogressive Boers will begin to move with the times.

Fruits, such as apples, pears, peaches, &c., do well in many parts; and, if carefully cultivated, would equal the best of those sent to the London market. They would, moreover, arrive at a time when fruit is scarce in England. In many parts of South Africa, more especially in Cape Colony, Natal, and the Orange Territory, fruit-growing is sure to become a very important industry.

It is in its minerals that South Africa has just now its greatest wealth. *Kimberley*, in Cape Colony, is the centre of the richest diamond-fields in the world. Diamonds are found also in other parts of the Orange Territory and in the *Rand.* The gold-fields of the *Rand* and other parts of the Transvaal surpass in productiveness those of America or Australia; and in Rhodesia there are other gold-fields still undeveloped. In many parts there are rich ores of copper, lead, and iron, and the supply of coal in Southern Rhodesia seems very large. Indeed, few parts of the world are as rich in minerals as British South Africa.

In Natal there is a considerable amount of coal-mining, chiefly in the district of Dundee and Ladysmith. The coal is mostly used to supply ships at South African ports. The export at present is over 100,000 tons, and is likely to increase rapidly. Coal is found in all the divisions of South Africa; but, as yet, the best coal discovered is that of Natal. The Cape government conducted a series of experiments early in the nineties which showed that the Natal coal was only very little inferior to the best South Wales steam coal. Natal coal is, therefore, consumed in large quantities by passing steamers, and is employed even in the British navy, to which the colony in 1898 offered 12,000 tons free of all cost.

SOME COMMODITIES OF TRADE

27. COAL.—I

It is largely due to the bountiful presence of coal in Britain, and to the occurrence of extensive iron-ore deposits in direct conjunction with our coal-fields, that the mother-country has obtained her pre-eminence as a great manufacturing and exporting country. The coal is at hand ready to smelt the iron-ore, ready to help to convert the smelted iron into engines and all sorts of machinery, and innumerable other articles. It is the coal that drives the engines when they are made, and that turns the countless wheels of the machinery in our manufactories.

Without coal-fields Britain could never have been the great commercial nation that she is, even though she had possessed her iron-ores and other minerals in abundance.

For her size Great Britain possesses immense coal-fields—nearly 12,000 square miles in scattered masses throughout her area—in the very centre of England, in Durham, Northumberland, and Lancashire; in South Wales, in Cumberland; in Lanarkshire, Ayrshire, and Fifeshire, in Scotland; and in other districts.

"Britannia" has been well represented as riding triumphantly on a coal wagon. Her coal wagons and her coal ships contribute much to her present greatness and power in the world. Her ships carry the coal over seas to almost every known part of the world.

Coal is one of our greatest articles of export, and is a source of great national wealth as a commodity of trade. In one year Great Britain has raised from her coal-fields over 200 millions of tons, valued at the pit's mouth at more than 60 millions of pounds sterling.

Coal varies much in the quantity of actual carbon which it contains, some kinds containing a greater percentage of ash than others. *Anthracite* coal is almost pure carbon, burns with little flame, and is used for furnaces, malt-kilns, &c. It gives more heat in proportion to its bulk than other kinds, and is therefore valuable for steamships, in which greater heat for less weight is of much importance. This coal, found chiefly in Wales, is often called "steam" coal.

There is also *bituminous*, or the "household" variety; and *cannel* or "gas coal", which is used for making gas in our gas-works. There are also *caking-coal*, *splint-coal*, and other varieties of less commercial importance. The percentage of carbon in these varies from 60 to 90 per cent.

For the many purposes for which it is used, our country continues to turn out an ever-increasing quantity of coal, and we export almost a million tons every week throughout the year. In a recent year our export of coal amounted to over 48 millions of tons, which is almost twice as much as the export of all other countries in the world together. Thus Germany, France, Belgium, Austria, Spain, Italy, and Japan exported among them only 24,067,000 tons of coal to our 48 millions; that is, just half of what the British Isles exported.

One of the greatest demands upon our exported coal is the supply to steamships engaged in foreign trade; and Great Britain possesses and supplies with coal a great number of coaling-stations for her ships in various parts of the world. At least fifty of these coaling-stations have been formed on the great ship routes, so that vessels are never at a very great distance from a possible fresh supply of fuel.

Our coal is a means of exchange for commodities with many other countries, and especially with our colonies and dependencies. A shipload of coal, for instance, to Australia would sell for money that would purchase a cargo of wool or mutton, or something which the colony had to spare; which in turn would sell at a profit at home, or at some other port on the way home.

Our export coal trade has grown almost entirely within the last half-century. Fifty years ago our export of coal was not much over a million tons a year, now it is almost fifty times that amount. Fifty years ago we supplied about thirty-five different countries with coal (including our colonies). To-day we supply close upon a hundred, and in much larger amounts than formerly.

28. COAL.—II

About the year 1860 it was variously estimated that our coal-fields at the then rate of consumption would not last longer than from 250 to 1000 years. The consumption of coal at that time was about two-fifths of what it is now, and it has been asserted that our coal will last a much shorter period. However, there seems reason to believe that with deepening pits, and opening up of new fields, as in Kent, our coal-supply may last indefinitely even at its present rate of output.

Moreover, if Britain's coal-fields became exhausted, there are many sources, as we shall see, from which she might import it, although it is doubtful whether our manufactures, which depend upon cheap coal, could be profitably carried on by means of imported coal.

There is much coal in British coal-fields too deep to be reached by present methods; and there is an altogether new coal-field lying deep down under the chalk deposits of Kent and Sussex, and which probably extends under the English Channel. It is more than likely that we shall be able to reach this coal by the time we need it.

It is a source of some satisfaction to us that almost all our colonies and possessions have considerable areas of coal. Thus Canada has some 97,200 square miles, India some 35,500 square miles, New South Wales some 24,000 square miles. Queensland, Western Australia, Tasmania, New Zealand, Cape Colony, and Natal also possess their coal-fields, while the United States have the greatest areas in the world, except China—China having a coal area of over 200,000 square miles, that of the States being 192,000 square miles.

Almost all our colonies and possessions are now not only coal producers for their own consumption, but are also coal exporters as well. The United States follows Britain in coal exportation, although its home demands for coal are so great that it exports only a small portion of its output. Then come, in order of the exportation, New South Wales, Canada, India, the South African Colonies, New Zealand, South Australia, Queensland, and Victoria. Altogether the Anglo-Saxon race exports seven-tenths of all the coal exported in the world.

As our colonies become opened up by railways, canals, and good roads their home-production of coal will doubtless increase, and so they will relieve the coal exportation of the mother-country. While they all as yet export coal, they still import large quantities from Britain, because that commodity can more easily reach them, or certain portions of their territories, by shipping than it could be conveyed to them across their own country, or even down to the sea to be shipped. But the time is coming when our ships will be supplied from the coal-fields of our outlying empire.

Coal is very widely found in a great many parts of British South Africa, the coal of Natal being perhaps the first in quality. It is calculated that the area of the South African coal-fields is about equal to the entire area of England and Wales.

For these coal-fields, as for those of Australia and New Zealand, the supplying of steam-ships, or "bunker" trade, as it is called, is likely to become of much greater importance than it now is.

Considerably more than half the area of all the coal-fields of the world is now in the possession of the English-speaking peoples, and that one fact alone speaks of a great future before them.

29. IRON.—I

The manufacture of iron and steel may be said to be the chief of our industries. The iron and steel trade of the United Kingdom has, aided by the abundant presence of coal, given her the commanding position she now occupies; and yet the great growth of the iron trade in the world may be said to have almost entirely come into existence since the beginning of the nineteenth century.

But in the small way in which iron was produced in the world prior to the beginning of this century England had long ago distinguished itself. Even when iron had to be smelted with charcoal (because folk did not know how to use coal for that purpose), England had its ironworks in Sussex and Kent and other parts where wood existed plentifully. It was only in the eighteenth century, after the difficulty in the use of coal for smelting iron-ore was overcome, that these old-world ironworks ceased to exist. Their last product was the fine iron rails around St. Paul's Cathedral, London.

It was in 1759, through the exertions of Dr. Roebuck of Birmingham, that the first works in the world for the smelting of iron-ore with coal were erected. These were the celebrated Carron Works, on the banks of the river of that name in Stirlingshire in Scotland. The choice of the situation of the works was made for the same reasons that have led to similar works being planted elsewhere, namely, because the iron-ore and the coal occurred there together.

With the beginning of the nineteenth century a great demand for iron and steel began, which has now become so great, that all the efforts of all the iron-producing countries of the world seem hardly able to supply it in years of active trade.

With the invention of steam-engines for factories, and particularly the perfecting of the railway-engine, came the growing demand for iron. With the growth of our colonies and the opening up of the vast areas of India, Australasia, and Canada, and such countries as China, Japan, Siberia, and other vast regions, the demand is likely to become greater and greater for years to come.

Of recent times the demand has grown too great to be supplied from Britain as exclusively as it used to be. Germany and the United States now also send out much machinery and ironwork generally.

While we have gone on, notwithstanding the increased competition of other countries, with an ever-increasing iron-production and an ever-greater export iron trade, some other countries, and the United States in particular, have also made gigantic progress in this industry. And at this time the United States actually produces a greater quantity of iron and steel than the mother-country. But she consumes the greater part of her output in her own enormous home market.

It is perhaps difficult for us to understand, that most of the purposes to which iron is now commonly put were hardly even dreamed of as possible in the early years of the nineteenth century: namely, iron roofs, iron houses, iron churches, iron bedsteads, iron lighthouses, iron ships, iron palaces, iron bridges, and a thousand other things and purposes for which stone or wood were formerly used.

Up to some fifty years ago Britain was the only great iron-producing nation in the world; and forty years ago, when the iron production of Great Britain had reached between 3 millions and 4 millions of tons a year, it was supposed to be, as a paper then put it, a "prodigious" and an "astounding quantity".

In 1858 the whole value of the iron produced in Britain was 14½ millions of pounds sterling. In 1898 the whole value of the iron production in this country came to nearly 60 millions of pounds sterling.

We *export* now from Britain more iron and steel than we made altogether then. In 1897 our exports alone of iron and steel were valued at 24½ millions of pounds, 10 millions of pounds more in value than all the iron we exported and all we used at home together in 1857.

30. IRON.—II

Great Britain has for so long exported her iron and steel in one form or another to all the civilized countries of the world, as well as to her colonies and dependencies, that it is not to be wondered at that her iron-ore deposits do not now yield on the whole nearly so plentiful a supply, nor of such good material, as they once did. There is still, of course, a plentiful supply. The Cleveland mines, for instance, and those of West Cumberland, contain enormous quantities of ore, and it is still mined in other fields.

But inasmuch as it has paid Britain to import the raw material for iron-smelting from northern Spain, a thousand miles away, and as it is known that Spain and North Sweden and Lapland contain illimitable quantities, we need not fear for our future supplies of the raw material. Our colonies, Canada, South Africa, Australia, New Zealand, and the eastern countries, such as India, China, and Japan, take also what is called bar-iron, that is, malleable iron. But while the demand for these forms of iron continues, other countries, which were formerly almost wholly supplied by Britain, can now themselves produce iron for their own needs; that is, dig and smelt and roll and hammer the iron, and even convert it into steel.

But, as has been already said, the demand for iron and steel is so enormous, that if other countries did not produce their share there would arise a perfect famine for that commodity throughout the world.

As has been pointed out, the mineral wealth of the English-speaking countries is very great. The United States possesses iron-ore in such abundance (and of excellent quality) in their mines near Lake Superior, that in places steam-lifters scoop it up from the open ground in any quantity. With their magnificent water-ways and marvellous system of railways, it need not astonish us that our American cousins can vie with the mother-country in iron production.

Canada is also rich in iron-ore. She has magnificent iron deposits on the northern shores of Lake Superior, and elsewhere. It is therefore a mere matter of time ere the Dominion of Canada become as great an iron producer as the States of America. Newfoundland, like Canada, has rich iron deposits.

The same may be said of our possessions in some parts of Africa, of Australia, of New Zealand, of India, and other possessions, which are all seeking to turn to account the vast mineral wealth of coal and iron which they all possess.

Now let us see how Britain and the United States and our colonies stand with regard to iron and steel productions compared with the rest of the world.

In 1898 Great Britain produced	13,800,000 tons.
The United States in the same period ...	18,700,000 ,,
These two totals together are ...	32,500,000 tons.
Now in the same year Germany produced	10,200,000 tons.
Russia for the same period	2,720,000 ,,
These two totals together are ...	12,920,000 tons.

So, if we allow the united production of iron and steel of Canada, India, and our other possessions to be about equal to the production of other countries not mentioned above, then it is seen that the English-speaking peoples are now producing three-fourths of all the iron and steel produced in the world, notwithstanding the rapid growth of the German and Russian iron trade and iron production.

31. MANUFACTURED IRON—MACHINERY, &c.

It is well-nigh impossible to even mention the great variety of forms in which manufactured iron goods are exported from Great Britain. There is angle and bolt and rod iron, iron and steel rails, iron chairs for the rails, and iron and steel in many other forms for railway purposes. There is galvanized sheet-iron for agricultural and factory and other buildings, cast-iron and wrought-iron, iron wire, pipes and tubes, stoves, fenders, fire-irons, agricultural tools, and a thousand other things.

There is the great trade in iron and steel plates for boilers and for ships, and finally magnificent machinery, from the gigantic engines for the great ocean-liners, the locomotives of our railways, the driving-engines of our factories, to the myriads of gas-engines and the millions of sewing and smaller machines which are turned out in the course of a year.

All these things are being turned out from the mother-country in endless streams. British railway engines, for instance, are to a greater or less extent running upon all the world's railways outside the United States, just as her steam-ship engines are possessed by every marine trading nation, and are the driving-power of nineteen-twentieths of the steamships on every sea. Her boilers and engines and spinning and weaving machinery are found in every manufacturing country, nay, in every manufacturing city, of the five great continents. Britain's agricultural implements are at work in almost unheard-of places in the world, just as her sewing-machines, with Birmingham hardware and Sheffield cutlery, may be found in the wigwam of the North-American Indian, in the hut of the African and New Zealand chief, or the Chinese mandarin's paper-walled dwelling.

Her iron bridges, of boldest design and marvellous proportions, span the rivers and chasms of Europe, of Egypt, of India, China, Japan, of North and South America, of Southern Africa, of Australia, and New Zealand.

The iron ships of the world are largely coated with plates of British iron and steel, and, not excepting the navies of the United States and Germany and Russia, our great rivals now in the iron industry, they carry now their light steel masts and their hollow wrought-iron yard-arms, all from the same source—the Briton's exhaustless workshops.

And even terrible warships with their heavy iron and steel walls, ships that may be turned against us any day, are sent out of little Britain to the American States, to France, Germany, Russia, Italy, and other nations. Many of their guns, of such awful power, but of such exquisite workmanship and skilled design that a child could manipulate them, are produced at the great Armstrong Works on the Tyne.

These things are still being sent out from British shores in unreduced numbers; but the demand for all these things is so unlimited at the present time, that other nations are manufacturing engines for steam-ships, locomotives, and all the other machinery which can be mentioned.

The demand, for instance, for iron goods in the United States is so great, that though that country produces more iron than Great Britain it does not export more than one-tenth as much as the mother-country. Indeed, for its ships and railway engines and bridges and textile and other purposes, and agricultural machines, it uses almost all its own output and still imports much from Britain.

Still, Britain's greatest customers for these things are some of her dependencies and colonial possessions: India, Canada, Australia, and New Zealand. Outside her own possessions she numbers among customers for machinery and iron goods generally, Japan, Russia, and China, which have awakened to the importance of railways for transit, and of engines for the conversion of native raw material into exchangeable merchandise.

32. GOLD

All the world knows the value of gold. The chief trading nations use it as money; gold as money keeps the trade of the world going. Gold, by paying for the labour and material, helps to open up a new country with roads and railways and canals and bridges, to plant it with farms, and to transform the millions of acres of barren prairie into acres of golden grain, that, where bear, or tiger, or jackal had reigned supreme, will cause to spring up as out of the ground the busy roaring city.

The history of gold discoveries is the real " Arabian Nights' Entertainment" of the world. And this has been exemplified in the most marvellous way by the gold discoveries in lands which have fallen to the lot of the Anglo-Saxon peoples during the present century, during, in fact, the lifetime of multitudes of the people now living, during the last fifty years.

Prior to 1848 the world's supply of gold came mainly from the Ural Mountains, India, and other parts of Asia, and from South America. But a new era of gold was begun when in 1848 gold was discovered in California (and since then in other parts of the United States). Then the "gold fevers" which have since repeatedly run through the world like true epidemics began their course. The result has been a gold production such as was never before seen in the history of human effort. The old gold production sinks into insignificance in comparison with that of the last half-century.

The gold production of the whole world for four hundred years prior to 1848 is estimated to have been £663,000,000 in value.

In the thirty-four years from 1851 to 1885 the world's gold production was valued at £890,500,000. While for one year (1898) it was no less than £59,000,000.

It is remarkable that gold has been found in chief abundance in our greater colonies and in the United States.

In 1848 there was the great rush to the gold-mines of California. In 1851 the world was startled by the discovery of gold in our then poor and struggling colonies of Australia, and a further rush of emigrants was made to Australia. From that time to this, gold has been discovered in many other parts of our possessions, and often in the very districts which the gold-seekers deserted in the earlier rushes.

It has been mined in New Zealand, in British Columbia and other parts of Canada, in the Transvaal district of South Africa, in India, in British Guiana. And within the last two or three years there has occurred the almost mad gold-fever, and the consequent and headlong rush to the mines of the Klondyke and its tributaries in the Canadian north-west.

Wonderful is the change which comes over any country, no matter how barren and inhospitable the district may be, where gold is discovered. Towns spring up, railways are constructed; and sometimes, even though the gold supply does not last, a position of thriving and permanent trade is given to a colony that it could never otherwise have reached.

33. SILVER AND COPPER

Silver, the white metal, as it is often called, is second only to gold as a money metal. It is used for the lesser coins by ourselves and by nearly all other nations. In China it is the chief money—gold not being used as money by the Chinese, while in India and in the United States, although the prices of things are really reckoned in gold, yet it is silver coin that passes from hand to hand.

For making rich articles of use and beauty, silver is prized next to gold. Like gold it does not corrode (or rust) easily, and is greatly used for spoons and forks, tea-pots, toast-racks, and the hundred-and-one articles of silver-plate that folks who can afford them like to possess.

America—both North and South—is the great source of supply of silver. The greatest amount used to come from South America, but now the rich silver-mines of the United States send out more than one-third of the whole yearly supply. Canada has also rich mines at the western end of Lake Superior, and silver is now an important export of the Dominion. The Transvaal district of South Africa, New South Wales, South Australia, and Queensland also produce silver, and could probably produce more than they do if it were wanted.

Copper is, after iron, probably the most useful of all metals. Copper kettles, copper boilers, copper pipes for hot water, copper sheathing for ships' hulls, copper lamps: all these suggest the numberless uses to which copper is put. And we must not forget copper wire, of which an enormous quantity is used in electric arrangements for tramways, for lighting, for telephoning, and other purposes.

Moreover, copper forms along with tin the beautiful alloy called bronze. Our pennies and halfpennies are of bronze, in which there is only a little tin to much copper; there are other kinds of bronze which contain more tin, and some which contain also zinc. Bronze is much used for ornamental purposes. It is a favourite substance with artists for statues.

Brass is another alloy of copper, and we know how widely brass is used. We can hardly turn round anywhere in town or village without seeing brass. There is probably not a house that is not supplied with brass door-handles. Brass kettles, brass hooks for cupboards, brass rods for curtains, brass bedsteads, are a few of the great number of useful articles which are made of brass.

The brass industry in England is a very important one. It is centred in Birmingham, where a great many people make their living by working in brass, the things they produce being sent abroad and to the colonies as well as used at home.

In Great Britain the mines of Cornwall are the chief source of the home supply; but much copper is also imported from the United States, where there are rich mines in the Lake Superior district; from Australia and Cape Colony, from Spain and from Chili.

The import of copper is chiefly in the form of ore, which is smelted and made into pure copper in this country. Swansea, in Wales, and Widnes, St. Helens, and other parts of Lancashire are the chief centres of copper-smelting.

34. TIN, LEAD, ZINC, NICKEL

Tin is hardly second to copper in usefulness, and has the advantage of being cheaper. It is of everyday use in the form of tin mugs for drinking, tin pails, tin cans for preserved meats, and biscuit-boxes, &c., and for a multitude of other useful articles.

These things are not made of pure tin, which indeed is not greatly used except for tin-foil, but from what is called "tin-plate". Tin-plate is really thin sheet-iron dipped in molten tin. Britain used to export tin from the mines of Cornwall, but now she imports large quantities. The chief imported supply is from the Straits Settlements, whose mines now provide half of all that is annually consumed in the world. Tasmania also sends us tin-ore, and a certain amount comes from other parts of Australia.

Britain used to find in the United States a large customer for tin-plate, but of recent years the people of the States have begun to make tin-plate for themselves, and there is no longer that market for the wares of our tin-plate makers.

Nickel, a white hard metal, has of late become of considerable importance. It is largely used as a plating for iron and other metals, to keep them from corroding. Every bicycle has its handle-bars, if not also its spoking, nickle-plated. With steel it makes a very hard alloy, now much used for armour-plating for the vessels of the navy.

Nickel is not found in Britain. Our supply is imported largely from Canada and the United States, but also from elsewhere.

Lead is another case of a metal which Britain no longer produces in sufficient amount for her needs. We import much ore from the United States, Australia, and elsewhere, and we export lead piping and other forms of manufactured lead.

Zinc is got from Wales and Cumberland and the Isle of Man; besides, we import zinc ore from Italy, Tunis, Australia, and elsewhere. As we have read under copper, it alloys with copper to make brass. In the form of zinc sheeting for lining cisterns, &c., it is much used and exported.

Zinc is used, too, in making "galvanized iron", which is really iron with a thin coating of zinc. In this form it is much used for roofing. We have also seen temporary buildings roofed with this material. In the South African colonies roofs of galvanized iron are very much in use.

35. WHEAT

Of all the vegetable productions of the world wheat is unquestionably the most important. It belongs to the natural order of the *grasses*, to which oats, barley, maize, rye, rice, and other *cereals* belong.

These various productions of the grasses are the actual "staff of life" to nearly all the world's inhabitants—wheat in one country, oats in another, and rice in a third, according to climate and other physical conditions. Few countries are, however, now limited in their consumption to the cereals which they themselves produce, since wheat and other cereals are distributed over the world as trade commodities.

For us in Great Britain wheat is the staple food grain, and our country occupies a very curious position with regard to its supply.

Great Britain consumes at home in one year nearly 240 million bushels of wheat. But we only produce about 60 million bushels, or one-fourth of what we actually use. We have, therefore, to import about

180 million bushels every year, either in the form of grain or of flour. This enormous amount we get largely from the United States and the colonies and India, though also in part from other countries. Let us see how wheat production has grown in some of the English-speaking regions of recent times.

Twenty years ago or so the United States exported wheat to the extent of 76 million bushels. That is a great quantity; but now the States export some 250 million bushels a year.

In Manitoba and other parts of Canada the growth of wheat has increased at the rate of more than a million bushels a year during the last fifteen years.

Less than twenty years ago the exportation of wheat from India was under 500,000 bushels; now India's export of wheat has reached 50 million bushels a year.

Thirty years ago less than a million acres were in Australia devoted to the production of wheat; now the area under wheat cultivation is between 4 and 5 million acres, which produce about 45 million bushels.

Yet with all this growth of production in English-speaking countries the deficiency of wheat in the mother-country is not yet fully supplied by our own possessions. But what our colonies and dependencies are at present producing is little to what they will probably produce in the future.

Let us take just one example by way of illustration. Manitoba in Canada—a small fraction of the Dominion not much bigger than England and Wales together—produced, by a recent computation, 25 million of bushels of wheat from 1 million of acres, and it has at least 20 million of acres which would grow wheat equally well. Now what could Manitoba alone produce in wheat?

If 1 million acres produced 25 million bushels of wheat, 20 million acres would produce 500 million bushels. Thus we see that Manitoba alone could, were that province fully developed, send enough wheat to the mother-country to supply her whole deficiency, and still have enough over for its own home needs. And other parts of Canada, and large tracts in our other colonies, could grow wheat to an almost limitless extent.

In the Australian Colonies, which are twenty-four times the size of the United Kingdom, there are several areas which could probably supply all Europe with bread. Then there is New Zealand, with an area of 28 million acres suitable for cereal crops; there are our colonies in Africa, and others, which could also add to the wheat-producing capacity of the British Empire. These, with the United States, could together grow sufficient for all the rest of the world. As long, therefore, as we in Britain can manufacture goods that our colonies and the States will buy from us, we need not fear as to the future of our bread-supply.

36. OTHER CEREALS—OATS, BARLEY, MAIZE, RICE

So far as human wants are concerned the liking which these various cereals have for different climates is a very valuable feature. If they all grew and would only grow in one particular climate (or climatal zone-belt) around the world, the world's supply of these things would not be above one-fourth or one-fifth of what it now is.

Wheat, for instance, grows well upon hot lands which are far too hot and dry for oats and barley, and which cannot grow Indian corn, because that cereal needs a longer though as hot a summer; and which could not grow rice, because that demands, with the heat, greater moisture in the soil than the others could bear.

Even farmers are sometimes ignorant of commonplace reasons why certain things grow better in one place and in one season than another. Such a farmer once expressed his astonishment to me that his wheat looked splendid in a hot dry summer while his oats were stunted and poor. The reason was this:—

As soon as the seed-wheat sprouts, it sends a tiny thread of a root straight down, one, two, three, or even four feet or more, till permanently moist soil is reached, and then the wheat flourishes; while the oat, which does not send down deep roots, famishes for the moisture and the cooler atmosphere which alone can suit it.

Once again we must say with regard to these other cereals what we have said of wheat, namely, that while our colonies and possessions could supply Great Britain and Ireland and each other's demands in these things, they at present do so to only a fraction of the possible extent.

The British Isles at the present time import large quantities of oats and barley, namely, about 40 million bushels of oats and 50 million bushels of barley. Now more than half the quantities of both these cereals comes from Russia.

In the north centre of Canada is an area of 260 million acres of land lying practically waste, which would grow sufficient barley and oats for all the wants not only of the British Isles but of all the vast British Empire. And in other parts of the Great Dominion and in Newfoundland there are immense tracts where, though not so suitable for wheat or barley, oats would grow to perfection.

But we are going on the right way to bring about the desired result. The British Empire, with the United States, bids fair to become the great granary of the world; this cannot, however, come to pass at a bound, but it is being done by persevering effort. Thus New Zealand has within the last seven years "cleared" and brought under cultivation the magnificent additional area of no less than 3 million of acres. This at a low estimate could produce 45 million bushels of the cereals we are now considering.

Maize is a grain which we do not grow at home at all, but which is imported to the amount of 70 million bushels. It is used for feeding cattle, made into "corn flour", and used as a vegetable, and for certain other purposes. The United States is the great land of maize, for the growth of which the long-continued heat of the central and southern states is very suitable. Nearly our whole supply comes from there, only one-tenth from the outlying domain of the British Empire.

Rice is produced in the well-watered plains of north-eastern India, including Burmah, which is an area better suited for the cultivation of this cereal than any other parts of our empire. It is from India that we get our great supply of this valuable food.

37. BUTTER, CHEESE, EGGS

It is a surprising fact, but a fact none the less, that in Britain the produce of the dairy is of more importance in our home-farming than all the wheat and other crops put together.

And yet, although the butter and cheese produced in our islands is excellent in quality, we fall far short of the quantity required for home consumption. Indeed our import of dairy produce comes to the enormous figure of 20 million pounds sterling per annum.

Under these circumstances we might expect that our supplies from abroad would come from our great agricultural colonies, Canada, Australia, New Zealand, Cape Colony, and Natal. Yet although we get a certain amount, and an increasing amount, of butter from the colonies, the greater part comes from the continent of Europe. Canada sends us an increasing amount of butter, Australia sends us still more, and the United States also send some. But for three-fourths of the total amount imported we depend on Denmark and other continental countries. As time goes on, however, the colonies will probably contribute a larger quantity than at present.

When we come to cheese, we find that Canada does much better with that commodity, for it now sends to the British Isles over half of the total amount of our import of cheese. This success of the Canadians in cheese-making is largely due to the good work of the Agricultural Colleges of Ontario, through which the Ontario farmers have become, perhaps, the most skilful cheese-makers in the world.

Of the rest of our cheese import the United States sends us about half; the remainder comes from various countries, especially Holland.

The only colony which sends us eggs is Canada. It is but a few years since she sent the first egg, yet in 1899 she sent us some 120 millions; a goodly number. And the number is sure to increase.

38. TEA, COFFEE

In the year 1660 a famous Londoner named Pepys wrote in his diary, "I did send for a cup of tea, a China drink, of which I never had drunk before". Pepys had not drunk tea before, because in those days, that is about two and a half centuries ago, tea was rare in the British Isles.

There is occasional mention of tea in England as early as 1615, and it had been used as a beverage in China for at least a thousand years before that time. But it was so great a luxury in the seventeenth century that in the year 1664 the East India Company thought they were bestowing upon King Charles a most handsome gift—as indeed they were—when they made him a present of two pounds two ounces of tea.

That amount was probably worth some £20 of our money. But, expensive as it was, the import of tea grew, and in 1678 it was five thousand pounds for the year. Forty years later (1720) our import had become a million pounds. And in a recent year our total import had reached the enormous quantity of 270 millions of pounds in weight, and we now buy good tea at 1*s*. the lb.

Up to a comparatively recent date the only tea-producing and tea-exporting country was China. Now very little of our tea is derived from China: most of it comes from our Indian Empire, chiefly from the presidency of Bengal and the island of Ceylon. Indeed, India sends us some nine-tenths of all we consume. Of the tea we receive in Great Britain a considerable amount is re-exported to the colonies.

Tea could be grown in many parts of the world, but the gathering and preparation of the tea demands so much labour, that unless labour be cheap and easily found it can scarcely be made to pay. It is grown to some extent in Java, the United States, Jamaica, Brazil, Natal, Queensland, and other places, but only where there is an abundadce of cheap labour is it likely to be very successful. India with its teeming population is therefore pre-eminently well suited for the cultivation of tea.

Of the tea exported from all the countries of the world the British Isles takes nearly half. The United States and Canada take about one-sixth, Australia and New Zealand about one-eighteenth, Russia less than a fourth. The other countries of Europe take comparatively small quantities. So it is seen that outside China and Japan the Anglo-Saxon peoples are the great tea-drinking race on the globe.

Coffee, as we know, is the seed of the coffee-plant, the "bean" or "berry" as it is styled, which has to be roasted before it is fit for use.

The original home of the coffee-plant is in Abyssinia and Arabia, but it is now grown in many parts of the world. Among British colonies the chief coffee-growers are India, Jamaica, and other parts of the West Indies, Natal, and Ceylon.

Ceylon used to grow coffee very extensively, but because of the failure of the plants through blight, coffee-planting has been largely given up in favour of tea-planting. In the West Indies, on the other hand, particularly in Jamaica, coffee is becoming of more importance as an article of produce than it has been.

39. SUGAR AND JAM

Sugar has become one of our most important foods, so much so that we can hardly imagine what the times were like in which sugar was almost or quite unknown.

Even in Shakespeare's time (1589) sugar must have been a great luxury which few could afford to buy, it being then 20 pence a lb., or equal to the cost of a quarter of a calf or sheep. But now sugar is exceedingly cheap; some of us must have seen it marked as low as 1*d.* per lb.

Up to the beginning of the nineteenth century the West Indies were the great source of almost the whole world's sugar-supply. To be a sugar-planter or a West Indian merchant was to occupy a proud and envied position, since it meant great wealth and vast importance in the eyes of the commercial world.

But with the great wars of Napoleon (1800 to 1815) there began the decline of the great sugar industry of the West Indies, which has gone from bad to worse ever since.

These wars of Napoleon prevented the cane-sugar of the West Indies being imported into European countries, which were therefore led to depend upon sugar produced from other sources, the great source being the sugar-beet, from which it is now very extensively extracted on the continent of Europe.

France, Germany, Austria, Belgium, and other countries have since then greatly extended the growth of beet for the home-production of sugar. The cane-sugar industry of the West Indies has suffered with the growth of the beet-sugar industry and the continued fall in price. In fact in some of the islands, sugar, once the great staple of industry, has almost ceased to be cultivated.

In 1898 we imported into Great Britain between seventeen and eighteen million pounds' worth of sugar. More than half of this sugar came from Germany, and is therefore beet-sugar. France, Holland, and Belgium together sent us about a fourth of the whole amount.

Of the whole amount, something under one million pounds' worth came from British possessions—mostly cane-sugar from Guiana, Jamaica, Trinidad, and some smaller islands of the West Indies, and from Madras.

The United States and other parts of America produce vast quantities of cane-sugar, but not sufficient for the home consumption, so West Indian sugar at present finds a market in the United States.

One result of the cheapening of sugar has been that a great new industry has arisen in Britain, the jam and marmalade industry. Sugar is used in such large quantities in the making of these preserves, that it pays to bring oranges, for instance, from far lands, California, Florida, Australia, Spain, to Britain, the land of cheap sugar, where they can be made into marmalade, and in that form sent abroad over the world; some, perhaps, to the very land that grew the fruit. South Africa is a rich fruit land, and yet our South African colonists eat jam and marmalade from Dundee and Paisley.

40. FRUIT

Fruit as an article of commerce occupies a very different position in the world from what it did a very few years ago.

We used to get oranges, lemons, and grapes from Spain, Portugal, Italy, and other parts of Southern Europe, and occasionally from North Africa. These, with some apples, pears, and plums from Normandy and Northern Europe, constituted practically the whole of our imports of fresh fruit. Dried fruits, such as raisins, currants, dates, figs, we got, and still get, from Southern Europe, North Africa, Egypt, and Arabia.

Oranges and apples we had for a very short time in the year, now we have them almost all the year round. The reason is simple. The fruit now comes from all parts of the world, and as the fruit crops of different parts of the world ripen at different times, so our markets are supplied in accordance with the progress of the world's seasons.

What would our grandfathers have thought if any had asserted that our very best fresh fruits, those above mentioned, as well as peaches, apricots, nectarines, plums, grapes, melons, bananas, and vegetables such as tomatoes and other garden products, would come to us in a perfectly fresh condition from the most remote parts of the earth? They would have thought that he who said so was either a fool, or a rogue who made very bad jests.

And yet we now get fresh fruits in excellent condition from the United States (especially California), from Canada, and our West Indian possessions, from New Zealand, from Tasmania, from several parts of Australia, from Natal and the Cape of Good Hope, from Ceylon, and from a few parts of India.

Some of the very best oranges we get have been grown in Southern California and Florida, others have been produced on the other extreme side of the world, in New Zealand. This state of things has come about by (1) rapid transit; (2) by improvement in methods of preserving, such as *canning* and *cold-storage.* Of cold-storage more will be said on a later page.

41. FRUIT—HOW TO GROW AND WHAT TO DO WITH IT

The mere fact that the soil and climate of a country makes it suitable for the growth of fruits does not make that country either distinguished or prosperous.

It is only when such important qualities of a country are made good use of, and the soil is made to yield up the possible produce, that it becomes either distinguished or prosperous.

Most of our colonial possessions have these qualities in an eminent degree: Canada, some of the West Indies, Natal, the Cape, Victoria, Queensland, South Australia, Western Australia, Tasmania, New Zealand.

But not in any one of these have we at present a good example of what may be done in fruit production, fruit preservation, fruit exportation; that is to say, a good example of what the production of fruit as a serious and important industry is like. But we may find such an example among English-speaking people, and that is California, on what is called the Pacific Slope of the United States. Let us take a look at it.

Climate and soil are, in California, admirably adapted to fruit production. And yet it is not so many years since there was very little fruit business in California. Now California is one of the greatest fruit-growers of the world, and would probably be the greatest if the water-supply of the country were better.

If we could pay California a visit, we should find almost endless apple and pear orchards in the north and higher levels of the country. Grapes planted in such a bold way, that there are millions of vines in single vineyards which stretch so far that the eye can scarcely see from side to side.

Then the orange and lemon, citron, fig, apricot, peach, nectarine, and plum orchards so stretch away one after another, that it is said one could journey even by train for days and not have passed through them.

Now it is not, in California, a matter of merely growing the fruit, it is the being able to do something with the fruit when it is grown. And here the Californians have shown remarkable tact and energy.

For some of their fruits they found markets in their natural condition. Such are apples, pears, grapes; these were shipped to various ports, or sent inland.

But they did not let vast quantities of perishable fruit which could not be thus disposed of go to waste. No; they set to work, and they "canned" some and they "dried" others.

And now, as the fruit comes to perfection, thousands of families turn out to gather and pack the apricots and peaches and apples and pears, or to prepare and dry the grapes; and whole acres, and thousands of them, of one and another kind of fruit in the splendid autumn sun of the Pacific Slope may be seen being dried; and thus apples, pears, raisins, currants, and prunes may be seen to become a valuable merchandise, which in lazier hands would have been declared to be unsaleable because there wasn't a market.

But the Californian also sought out his market as well as preserved his produce. He canned and dried his fruit, and then sent it to distant parts where a market could be made. Now his market is in every quarter of the globe. California sends its fruits to the Cape Colony, and to some of our Australian

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colonies among other places, though some of the Australian colonies themselves grow fruit for the market which in due season they send to California.

In New South Wales the cultivation of the vine is largely carried on, and the wines of that colony are famous throughout Australia. The orange groves around Sydney and Paramatta are very productive. In Victoria, fruit of all kinds gives very satisfactory results. Special care has there been given to the varieties suitable for drying, canning, and exporting, and fruits in their various forms are now being exported to British and foreign markets. Moreover, the planting of vines has in Victoria increased more than any other kindred industry.

South Australia is also an admirable grape-growing country, and in Western Australia climate and soil are both admirably adapted for the cultivation of grapes. The number of vineyards there is also increasing yearly, and also the quantity of wine produced, though as yet little is exported.

Queensland sends us pine-apples, and Tasmania, not to be left behind, is going in for fruit-preserving. In New Zealand, too, orchard-planting makes rapid progress. In the Auckland districts much attention is being given to the cultivation of oranges and lemons.

Canada has long been known as the land of apples. Recently it has been sending us lovely peaches and pears and plums from the lake district of Ontario.

42. LIVE-STOCK TRADE

Nothing was ever more remarkable than the change which has come about in the food-supply of Britain during the last half-century.

If we look at the live-stock trade, that is, trade in cattle, sheep, and pigs, we find that the whole aspect of meat-supply to this country has entirely changed during something less than fifty years.

Let us take the *source of the supply* of cattle, sheep, and pigs, and by way of illustration limit our present enquiry to what is brought to London alone.

In the year 1853 only a little more than *one-seventh* of all the cattle and sheep and pigs which were sent to London was from foreign countries, the rest being supplied by other parts of the British Isles. In 1898, of all the live animals which were landed in London, *two-thirds* came from the colonies or from foreign countries.

Now, let us notice that in 1853, out of over 80,000 head of cattle imported into London from abroad, *three-fourths* came from Holland, and almost all the rest from Denmark, Germany, and Belgium. In 1898 *the whole* of the 223,000 live cattle imported into London came from the *United States*, *Canada*, and the *Argentine Republic*. Here we see a complete change in the sources of the whole cattle supply. With regard to sheep, the change effected is equally great. In 1853 230,000 sheep were imported into London, of which the whole came from ports on the shores of the North Sea, most of them from Holland.

In 1898 351,000 live sheep were landed, but not one from anywhere across the North Sea; 323,000 came from the Argentine Republic, and the rest chiefly from the States and Canada.

The supply from Europe, which fifty years ago was the only foreign supply of live cattle and sheep, &c., to Britain, has entirely ceased.

But for the immense development of transporting power by steam, such importations of cattle and sheep across thousands of miles of land and ocean would not have been possible.

To-day London depends for two-thirds of its live stock upon our colonies or upon foreign countries, leaving one-third of such provision to be supplied from other parts of Britain or Ireland. Now, what is true of London is true of the whole country, namely, that the whole of Britain depends more than it did fifty years ago upon a colonial and foreign meat-supply. Its population is much larger, while its area of possible agricultural produce remains the same as it was, and so we have to buy an enormous number of cattle abroad.

The cattle imported from the States and Canada have to be killed where they are landed in order to prevent the introduction of disease among the home herds. Some farmers in Britain are anxious to stop this killing at the port of landing, as they would like to get Canadian cattle for the purpose of fattening on the home pastures.

Horses are also brought to our country in great numbers from the United States and Canada. The people of the States send us about four times as many as come from Canada; but as time goes on, the number from Canada, already considerable, is sure to increase. These American horses are used freely as bus horses and cab horses. Drivers sometimes speak of them as *mustangs*, mustang being the name of the wild horses of the American prairies. But it is not really mustangs that are sent over here. The mustang is, after all, a pretty poor kind of horse. Something better is wanted for our use; and the horses sent here have been carefully reared by American and Canadian farmers.

43. "COLD STORAGE"—WHAT IT IS AND WHAT IT DOES

When the great philosopher Bacon left his carriage in the depth of winter to stuff a chicken with snow that it might "keep good" till it could be cooked, and when our grandmothers used to "bottle" their gooseberries and plums and bury them in the ground in order that they might have fresh fruit at Christmas, they had invented what we now know as "cold storage".

Cold storage is the present-day application of Bacon's snow, that is, of *ice*, to the preservation of animal and vegetable produce that can only be kept for any length of time at a very low temperature.

We hear now about frozen meat, frozen beef and mutton, frozen poultry, game, eggs, and butter; we hear now even of the cold storage of fruit—apples, plums, and all sorts of fruits that would not keep beyond a certain period in the ordinary temperature.

At present it is possible to despatch to Britain say a thousand bullocks killed far away in the States or in Canada, or as many sheep killed in Australia or New Zealand, without fear of the carcasses going wrong on the journey.

It reads like a fairy-tale. It is more than a fairy-tale, for it is the veritable "Jack Frost" himself—the good-natured, mischievous imp he was always considered to be, coming and touching all these dead carcasses for us with his wand, and lo, they keep as fresh for months (or so long as he keeps his authority over them) as when they were killed.

And this is the secret. As soon as our brethren over the seas find it necessary to kill their bullocks or sheep, although they have no markets at hand, they kill and immediately store the carcasses in "refrigerating stores". These are stores in which the carcasses are reduced to a low temperature, in which state they keep till they can be put on shipboard to be sent to their destination.

The ships, too, are fitted with chambers kept cold by means of ice or some artificial means of cooling. In these chambers the beef or mutton comes safely through tropical heat, through calm and storm, and we buy it in our shops as sirloins of American beef or legs of Australian mutton.

The system of cold storage has been introduced at several of our ports, and in them are stored game and fowls, and butter and fruit, in fact, nearly every kind of food-stuff that would spoil by keeping in the ordinary way. Australian butter is thus kept and put on the market, and so also Canadian apples and peaches, which, as a result, can be had in good condition at any time of the year.

44. DEAD-MEAT TRADE

One would naturally have thought that with the great growth of London since 1853 there would be at least a corresponding increase in the number of live cattle and sheep sent to its markets.

But the truth is, that there are to-day fewer living animals of any sort sent into London than there were half a century ago. Thus, in 1853 about 250,000 home-grown oxen and calves were sold in the old Smithfield Cattle-market. In 1898, to the cattle-market at Barnsbury, which has taken the place of the old Smithfield Market, only some 80,000 home-grown beasts were brought.

If we concluded from this that London consumes less beef and mutton than it did when it had a much smaller population, we should, of course, be altogether wrong. London now consumes a great deal more of these foods than ever it did, and the explanation is to be found *in the form* in which it is imported. It is now imported as "dead meat" more than as live cattle.

This great change has come about (1) by increased rapidity of transit; (2) because it is more economical in the matter of *space* to bring dead meat, since many more carcasses can be stored than could be brought alive; (3) "cold storage" has made it possible to bring dead meat of any kind from practically any distance. So we find that in 1898 450,000 tons of dead meat altogether reached London, while in 1853 the amount was but 200,000 tons altogether.

Thus, in 1898 the amount of dead meat delivered in London was nearly half a million tons. This enormous quantity is not all beef and mutton. There is also much lamb and pork, bacon, ham, poultry, rabbits, and game.

The amount imported for the whole United Kingdom is very great. It represents in money more than 27 millions of pounds sterling. This, namely, is the value of the dead meat imported in one year into the whole country. Rather more than half of that whole amount comes from our own colonies; a great deal comes from the United States, and some from foreign countries.

Of beef, the United States sends us some 100,000 tons, Queensland 24,000 tons; and considerable supplies come from New South Wales, New Zealand, and Canada.

Of mutton we import a great deal fron New Zealand, and much also from the Argentine Republic, and some from New South Wales.

Pork, in the shape of bacon and hams, we get in large quantities from the United States and Canada. The Canadians do not produce so much ham as their neighbours in the States, but they think their ham the better. Certainly it would be difficult to find more delightful food than Canadian sugar-cured ham.

In the form of tinned or "canned" meats, such as tongues, kidneys, tinned beef, tinned mutton, and the many other kinds procurable, we also import a great deal of meat. The United States, New South Wales, Queensland, all contribute.

45. FISH AND FISHERIES

The harvest of the sea is as important to many as the harvest of the land is to us all. And particularly to the British Isles are the products of the sea important. It should be so, since our home territory consists of sea-girt islands, which give us, with their great indentations, a vast extent of coast in comparison with their size, and the surrounding seas, being shallow, are the home of vast multitudes of edible fish.

The world's first heroes were probably fishermen, who launched out upon the deep in dug-out tree trunks, not at first to make voyages, but to catch fish. And the old habit has come down strongly impressed upon Britain's sons, who are not only daring and expert fishermen around the home shores, but venture into the remotest parts of the great oceans, in order to secure the harvest of the waters wherever it can be found.

They go towards the north and the south poles for whales, to the extreme of North America and Northern Europe for seals, to Labrador and Newfoundland for the great cod-fishing; wherever there is a profitable ingathering to be made, and wherever Britons have a right to intrude with their ships or their fishing-smacks, there British fishermen are to be found.

Away in the North Sea—say between Wick in the north and Sunderland towards the south, some three thousand fishing-boats are engaged in the North Sea during the season of the herring-fishing. These boats, which venture many miles from land, employ more than twenty thousand hands, and a number almost equal to this are engaged in selling, distributing, curing, and exporting the "catches" on the shores.

In one of the worst herring years as many as 397,829 barrels of that fish were cured; but in a good season many times that quantity is landed, the larger half of which is exported to Europe or to our colonies. And beside herring, as we know, there are many other kinds of valuable fish, such as cod, ling, haddock, soles, halibut, turbot, mackerel, pilchard, sprats, brill, whiting, hake, plaice, &c.

If we reckon the fish taken by trawls and lines (herrings, pilchards, and sprats being caught mainly by net), and also include crabs, lobsters, oysters, and other shell-fish, we find that in 1899 the total catch for England and Wales had a value of £6,719,972; for Scotland, a value of £2,271,816. Thus, for the whole of Great Britain the value was about £9,000,000.

46. COLONIAL FISHERIES.

Newfoundland to-day has a population of only a little over 200,000, although it is a much larger island than Ireland. But in the fishing season this population is enormously increased. Cod and cod-liver oil are the great export of the hardy fishers of the Banks of Newfoundland.

In the great Dominion of Canada the fisheries, if we take marine and inland together, are among the most extensive and important in the world. Canada has a magnificent coast-line along the Pacific and along the Atlantic; and with this vast coast-line must be reckoned the fishing-ground of the great lakes, which are themselves inland seas, and the magnificent rivers of the Dominion.

Cod is the principal marine fish of the Dominion, others being herring, haddock, mackerel, hake, and halibut. The take of mackerel had been during some years a quarter of a million barrels a year. But mackerel-fishing is now reduced to nearly a third of that quantity. The dog-fish yields a fine machine oil.

The seal-fishing on the Pacific shores is important, as providing skins for the beautiful and warm sealskin jackets sold by our fur dealers.

Trout, salmon, and other fresh-water fishes are caught in immense numbers. For many years past we have seen in the provision merchants' windows stocks of "tinned" salmon.

A great part of this tinned salmon comes from Canada, and most of it from British Columbia. Several years ago the salmon sold reached a value of over three-quarters of a million pounds. In 1897 salmon was tinned at the "Canneries" of British Columbia alone to the value of £700,000 sterling.

Though salmon of from 50 to 70 lbs. have been occasionally, but very rarely, caught in the Tay and other British rivers, in Canadian waters they are often 80 lbs. in weight; and so prolific is that splendid food-fish in North America, that in Vancouver Island,

and along the rivers of the Pacific shore, salmon are, or have been, used as manure for the land. It has even been asserted that the paddle-wheels of steamers on some of the British Columbia rivers have been stopped by becoming "clogged" with salmon.

47. WOOL.—I

Wool is not only at the present time one of the world's most important products, it is also one of the oldest commodities of trade, for since civilization was advanced enough to demand other clothing than the skins of beasts, woollen fabrics of one sort or another have been in demand.

It would be more correct to say that woollen fabrics have been in demand in the temperate and colder zones of the world, and linens and cottons in the hotter regions, as far as we can trace back in history.

In the year 1790 some fine-woolled sheep were presented by the King of Holland to what is now Cape Colony — it being then a Dutch settlement. Twenty-nine of these sheep were purchased and taken on English warships to our Australian colonies, where they became the ancestors of the many millions of sheep which are thriving there to-day and supplying the best and longest-stapled wool in the market.

The Australian colonies are now the greatest wool-growers in the world; a good deal owing, perhaps, to the perseverance and enterprise of one man, who was the first (in New South Wales) to establish large and well-conducted sheep-runs. This man, Mr. John M'Arthur, sent the first shipment of wool from Australia in 1807. It was but 245 lbs. in weight, and all from his own sheep; but the example was followed, and thirty years after (in 1837) 7,000,000 lbs., or 3000 tons weight, was shipped from Australia. Now Australasia ships nearer 500,000,000 lbs. to the mother-country every year. The sheep in these colonies number more than one hundred millions.

Among our possessions South Africa comes next to Australasia in the production of wool. In Cape Colony alone there are 13½ millions of fine-woolled sheep, sufficient to entirely clothe the inhabitants of two such countries as Denmark or Greece. Beside these sheep there are some 3 million Angora goats, which yield a fine long-stapled hair or wool.

New Zealand also exports a large quantity of wool, almost double the quantity of the African colonies.

Let us notice that the great market of our wool-producing colonies, Australia with Tasmania and New Zealand, the South African colonies, and to some extent Canada, is the mother-country. London is the chief wool market of the world. Vast quantities are sent there, and thence sent to other lands. Wool markets have now been established in the chief Australian towns, where a great deal of wool is disposed of, and sent chiefly to Britain, though also to some extent direct to New York and other centres of wool manufacture.

The British people are the great woollen manufacturers of the world. The mother-country buys the wool from her colonial children, and, like a good and sensible mother, sends it back to them, to Canada, the United States, and India, and to almost all the world's markets, as manufactured yarns of "wool" and "worsted", and in millions of finished "pieces" of cloth. She also makes up cloth into suits of clothes, and sends these ready-made suits out to the colonies and India. This business of the manufacture and export of ready-made clothes is now one of the very large industries of Britain, and it is steadily growing. This is chiefly due to the introduction of machinery, which has greatly reduced the cost of making clothes.

But our colonies, as is quite natural and proper, are beginning not only to grow wool, but to manufacture it into cloths of various kinds. "For the first time in history," says a commercial paper, "New Zealand has sent to this country a consignment of woollen goods produced and manufactured in the colony. This first consignment consists of rugs, blankets, and wearable flannel, which were produced at Dunedin (New Zealand), where a thousand work-people are employed in this industry." Canada manufactures both yarns and woollen goods, but at present she uses largely her own wool, which is inferior to Australian. Hence her woollen cloth for wearing apparel is inferior to that of the mother-country. There are woollen factories also in South Africa.

48. WOOL.—II

The chief export trade of our colonies with the mother-country is in wool. It is the chief product of our Australian colonies, where the best wool in the world is grown; it is the chief agricultural export from South Africa, and it is a large export from New Zealand and Canada, as well as from India.

Altogether Great Britain imports from her colonial possessions and India raw wool to the value of 25 millions of pounds sterling. Now the mother-country produces great quantities of wool at home; yet for her home manufactures — for her yarns and worsteds, for her heavy broad-cloths and lighter makes, and for her raw wool exports, she requires nearly four times as much as she produces at home.

Britain also gets a certain amount of wool from the United States, and on the other hand the United States are big customers for our heavy, broad, all-wool fabrics, as well as for lighter makes.

So it is with Canada, Australia and New Zealand, and South Africa. They send us the raw wool, and we return woollen goods in a vast variety of useful forms—wearing apparel, underclothing, socks, hats, carpets, rugs, and other things. To India we send the lighter woollen fabrics, to the colder of our possessions, naturally, the thicker and heavier materials; but it is all a mutual benefit, as international trade always is.

Great Britain with her colonies possesses more wool-producing sheep than all the rest of the world put together. Her colonies possess four times the number of sheep to be found in the United States, and eleven times the number possessed by Germany and her possessions. Britain's colonies possess the finest sheep-runs in existence, and hence produce the heaviest crops of wool in the world.

Even the United States could never compete with the British empire in wool production, and therefore not in the production of manufactured woollen goods. The future wool trade of the world is in our hands if we are wise and make the best of our opportunities.

If we include the United States, then four-fifths of the wool production and of the woollen manufacture of the world is in the hands of the English-speaking people, and is, under present conditions, bound to remain so.

49. COTTON.—I

Wool is, of course, the natural produce of sheep, and along with it may be classed the hair of goats, camels, and other animals. Leathers, that is, cured and tanned skins, come largely into the list of clothing materials, and these, with silk, all come from the animal world.

The vegetable products available for clothing are at least of equal importance. We have only to mention cotton, linen, and jute, to be reminded how important these vegetable products are. Of these three vegetable products cotton is by far the most important.

This fibre, so valuable for spinning and weaving, is a natural vegetable hair-like substance which surrounds the seed of the cotton plant. When the seed is ripe the fruit (or cotton-pod) opens, and the cotton material with the seeds attached bursts out like a snow-white cloud.

This is the cotton, which, separated from the seeds, is so valuable as a textile commodity. By nature this cottony attachment of the seed is doubtless intended to enable the seed to be carried about the world by the wind, just as the long filmy hairs of the seeds of the thistle and of the dandelion enable them to be carried about.

The cotton plant, fortunately for mankind, grows over an enormous extent of the earth's surface. It will grow almost anywhere where there are long dry summers, so it may be grown almost everywhere within the tropics and in a good many sub-tropical regions.

Fortunately, too, there are a good many species; that is, different kinds of cotton plants. So, where one species does not thrive another kind is found to do well.

Cotton is a native of the Old World as well as of the New. It has been cultivated in India and other parts of Asia in times further back than can be traced. It was known in Egypt at least six centuries before the Christian era.

In Western Europe it became known at a much later period, and at first only as an article of the greatest luxury. It was about the fourteenth century that cotton thread was imported for the first time into England.

We have noticed that in the Old World (in India, for instance) cotton as a textile commodity is so old that the beginning of its use cannot be traced. In the same way the manufacture of cotton cloths appears to have been well understood by the Mexicans and Peruvians long before the discovery of America by Europeans.

Cotton is largely produced in India and the adjacent regions. An excellent long-staple variety is grown in Egypt, in Cyprus, and along both the northern and southern shores of the Mediterranean. It is grown in the West Indies and in other parts of North and South America.

But the great source of Britain's supply is the southern and south-eastern area of the United States. Some of the islands along the shores of South Carolina and Georgia are famous for a long-staple variety of cotton, which, from the localities of its growth, is called "sea-island cotton". That generally grown elsewhere is of shorter staple, and is not of such fine quality.

The cotton production of the United States is enormous—more than half the cotton used in the world being the product of the Southern States of the Union.

Some cotton is also exported to Britain from India, and a very fine quality from Egypt.

From Egypt we import far more than from India, and more now than formerly, and the amount is increasing. From India we import less than formerly. Cotton is now also being grown in our Australian colony of Queensland.

50. COTTON.—II

It is a most remarkable fact that two-fifths of all the world's raw cotton is sent to England for manufacture.

Vast quantities are grown in our Indian dependency, but the most of it is used in the Indian mills and factories. These, however, cannot produce manufactured cottons enough for India's enormous population, and a large importation of cotton goods is necessary.

If we look again at the first statement in this chapter, we shall not be surprised to learn that the cotton manufacture of Britain is the most important of all its manufacturing industries, textile or otherwise. We shall not be surprised at the enormous sums of money representing the value of this industry. When we learn that we export each year manufactured cottons and yarns to the value of between 60 and 70 millions in money, we have some notion of what it means. But if we say that every week throughout the year we export a million and a quarter pounds worth of manufactured cotton, or £200,000 worth every working day, we shall perhaps understand it better.

Let us study some of the actual figures. We first of all import raw cotton to the value of 34½ million pounds sterling, of which 27½ millions' worth comes from the States and 6 millions' worth from Egypt. Then, after providing for our own wants we export manufactured goods and yarns to the value of some 67 millions in money. This export is made up chiefly of cotton "piece" goods, yarns (bleached and unbleached), lace and patent net, and cotton thread, of which last we export almost 4 million pounds' worth.

Where does all this material go to?

It may be said with truth that the whole world is the market for British-made cotton goods, for they go everywhere. But there are naturally parts of this vast market more important than others. These are, for our finished cotton pieces, the colonies. The rest is distributed among other countries, the United States being a big customer.

Of lace and net our colonies take to the value of about half a million, the States to about three-fourths of a million. Of the yarns our colonies take some two million pounds' worth.

South Lancashire is the chief centre of this great cotton industry. Liverpool is the port through which nearly all the raw cotton enters the country.

The chief cotton-manufacturing towns are Manchester, Salford, Bolton, Blackburn, Preston, Bury, Wigan, Oldham, Ashton, Chorley, Rochdale, in Lancashire; with Stockport, Stalybridge in Cheshire, and Nottingham for lace, and Paisley for thread.

That there should be a full and free supply of raw cotton to our factories is a matter of much importance to us as a nation. During the time of the American civil war (1861 to 1864) the shipping ports of the Southern States were blockaded, no cotton was therefore exported from the States at all. This was disastrous to Britain, and for the greater part of that time most of the great mills of Lancashire were closed. The result of this "Cotton Famine", as it was called, was that two millions of people were reduced to a state of great privation, which lasted with more or less severity until the end of the war in 1865.

We can thus see the danger that exists in being dependent upon any one nation for the supply of raw cotton. We ought to cultivate more cotton in India, more in Egypt; and encourage the growth of cotton in the West Indies, and wherever it will grow in our other colonies, as in New South Wales, Queensland, and Natal.

Meantime we depend less and less upon our East

Indian supply, instead of looking for more. We could depend in an emergency somewhat upon Egypt; let us hope, hereafter, also upon other parts of our own empire.

51. LINEN AND JUTE

Linens and woollens were almost the only known articles of ordinary wear in this country during the middle ages. But with the growth of the cotton industry linen has fallen from the leading place it once held. It is, of course, still much used in dress. Linen collars and cuffs and handkerchiefs are everywhere in use. The fibre being much stronger than that of cotton, linen is better suited for these articles. It is also used for making table-cloths, damask curtains, and towels and sail-cloths, and in other ways. The chief centres of the linen industry are the north of England, the east of Scotland, and the north-east of Ireland, and from these centres a large export trade is done with the United States and with the colonies. The States take chiefly the finer kinds, while both the finer and the coarser kinds, such as sail-cloth, go largely to the colonies. Flax, the plant that supplies the fibre, is not grown largely in Britain except in the north of Ireland. The bulk of the raw material is imported, but from the continent of Europe, not from the colonies.

Jute is the fibrous tissue of the inner bark of a plant allied to the lime or linden tree, all of which natural order possess a highly fibrous bark. It is a native of India, and is specially cultivated in Bengal, in the delta of the Ganges, whence it is shipped to Britain in sailing vessels, the material being too cheap to pay for steam-carriage.

Though jute was introduced into Britain as a textile fabric no longer ago than 1830, it has from remote times been cultivated and fabricated into cloths in Bengal. Its fibres have a fine texture and a glossy surface, but they are easily damaged by water, nor do they accept dyes or retain them well. So it is mainly used for coarser fabrics, such as sack and bag material, although it is used for the "backing" of carpets, and even in cheap satins and silks, and, with hemp, for cheaper cordage.

Dundee is the chief seat of the jute industry. We import about 350,000 tons of the raw material, which is valued at about £4,000,000. Vast quantites of jute are, however, manufactured in India; from whence, in addition to the raw material, we import about £1,500,000 worth of the manufactured article.

Our export of jute, yarn, and piece goods amounts to some two and a quarter million pounds. The United States and Canada are our best customers for manufactured jute goods.

52. HIDES AND LEATHER, BOOTS AND SHOES

"There is nothing like leather" is an old saying. And, indeed, it is hard to think what we could get to take the place of leather in its manifold uses. We are all shod in leather, our horses are saddled and bridled and harnessed with leather, we have purses of leather and straps of leather, shoemakers and smiths wear aprons of leather. Books are bound in leather, coaches and broughams are often cushioned with leather. All these different purposes make necessary the use of many different kinds of leather. But all leathers are alike in being produced from the hides of animals, tanned and suitably treated to preserve them, and give them those qualities that distinguish a piece of raw hide from a piece of leather.

The hides of cattle and horses, and skins of sheep, pigs, and goats of our own land are, naturally, made use of by the leather manufacturers. But the home production of hides and skins is not nearly sufficient for their requirements. An enormous number are imported, and largely from the colonies, principally from India and the African colonies. The Canadian and Australian colonies and the United States do not send us many hides; they prefer to use the bark of their own trees to tan their own hides, which they then send to us as undressed leather, though from the United States we get, in addition, leather fully finished.

India, in addition to sending us hides and skins, also sends us a large amount of undressed leather. Indeed we import even more undressed leather, to be afterwards finished by our manufacturers, than we do raw hides and skins.

Of finished leather we export a great deal, and we manufacture a great deal into various kinds of articles. Of these, the most important are, of course, boots and shoes, of which we export large quantities to the colonies, chiefly to Natal, Cape Colony, and Australia. We sell something like one and a half million pounds' worth of boots and shoes every year. Leicester and Northampton are the two great centres of the boot and shoe making industry, and in Leicester it is common to say of a man who works in the great shoe factories there, that he is "among the shoes". Oddly enough, although we export so many boots and shoes, we also import many, something like £500,000 worth per annum. We also import large quantities of gloves.

Harness and saddles form another great article of export. These we send largely to Australia, Africa, and India. Wherever Englishmen go, English saddles are sure to follow.

53. THE TIMBER TRADE

Timber is not a great product of the British Isles. We have no large forests such as those of America, India, and Australia. If we had to rely solely upon our home supply of timber, we should be sadly put about for want of this most necessary of materials. Turn where we will we see timber. In our houses, the beams and joists, the flooring, window-frames, shutters, doors, are made of timber; our furniture is of hard wood of one kind or another. In the schools—desks, forms, black-board, slate-frames, and ever so many other things, are all of wood. In the street we see scaffoldings, sheds, wheel-barrows, cabs, carts—whichever way we look, we see wood in use for one purpose or another. In London the very roadway itself is paved with blocks of wood.

Now, where does all this timber come from?

Some comes from foreign countries, particularly from Norway, Sweden, Russia, and Austria. But we also depend largely on the forests of our colonies and the United States. Of all woods the most widely useful, and in fact the most indispensable, is *pine*, the wood which supplies ordinary deal boards. There are different kinds of pine—white-pine, yellow-pine, pitch-pine, red-pine; we need not go into these differences. Pine timber in general is easily worked, provides long straight boards, beams, and planks, and for this reason is used in all the ordinary work of the carpenter.

The pine is a member of the fir tribe. It is closely related to the spruce-fir, and the giant cedar of British Columbia. All these are valuable timber trees, and all are of the kind that do not shed their leaves in winter. The wood of these trees is often called *soft wood*, to distinguish it from *hard wood*, the name given to the wood of trees that shed their leaves in winter. The wood of such trees is generally much harder and more difficult to work than pine. *Hard wood* of one kind or another is used for making furniture, *soft wood* in the ordinary operations of the carpenter and joiner.

From Canada and the United States we receive a great amount of pine timber. Much comes in the form of great squared logs, which are, in our saw-mills, sawn into planks and boards. Much also is sawn up in the saw-mills of Canada and the States, and is sent to us ready-made into planks and boards; and much comes in the form of window-sashes, doors, and other parts.

But Canada and the States provide much hardwood as well as pine. *Oak*, *beech*, *walnut*, and *maple* are brought over to be made into furniture and other things for which a hard, durable wood is required.

Many articles of furniture are made both in Canada and the States for the special purpose of being sold to Britain. From the States there come step-ladders, neat little tables, towel-rails, besides chairs with curved wooden seats, office-desks, and many another handy piece of furniture. Canada now also sends us office-desks and school furniture and other things.

The most important wood of all for furniture, namely *mahogany*, does not come from either the States or Canada. The great source of supply of this beautiful and valuable wood, *Spanish mahogany*, is the West Indian colony of British Honduras. From Sierra Leone in Africa we get a certain kind of mahogany, and from India and Ceylon still other kinds. There are certain woods procured in other regions of the empire that also go by the name of *mahogany*, but they differ from, and are not so valuable as, the real Spanish mahogany. The wood of the Australian *red-gum* tree is sometimes called *Australian mahogany*, and is imported to some extent. There are a number of other kinds of gum-trees in Australia, some of which supply very durable timber imported for use in ship-building and otherwise. The gum-trees known as *karri* and *jarrah* supply blocks that are used for paving streets, particularly in London.

In our ships of war and great ocean steamers a great deal of *teak* is used. It is brought chiefly from

Burmah, where, in the words of the poet Kipling, you can see "Elephants a' pilin' teak". It is an extremely hard and heavy wood, and, on account of its hardness, is sometimes called *iron-wood.* In the ships of the navy it is used inside the armour to strengthen the sides of the ship. In ordinary steamers it can be seen in the gratings on the floors and in many other fittings.

54. SHIPPING AND SHIP-BUILDING

"He that rules the sea rules the commerce of the world. And to him that rules the commerce of the world belong all the treasures of the world, and indeed the world itself."

These may well be called memorable words, for though they were uttered by Sir Walter Raleigh more than three hundred years ago, it would seem that they have hung in the nation's mind ever since. At any rate, Sir Walter Raleigh's nation has risen to the rule of the sea, and thereby to the rule of the commerce of the world, and to the possession of a great share of the world itself.

This has all come about by means of the nation's shipping; a statement which means (1) that we have shown a capacity to build ships, (2) an ability to man them, and (3) an adventurous spirit that has led us over the seas of the whole world, and a courage that has enabled us to maintain our position on these seas.

The ship-building industry of Great Britain is greater now than it has ever been before, and it is by far the greatest ship-building industry in the world. Besides great war-vessels for our navy, our ship-yards build merchant vessels for themselves and for all nations that want them. But our own carrying trade is so large that we have to build at least two for ourselves for one we build for others. At present we stand unrivalled in ship-building and ship-owning. The United States and Germany are the greatest ship-owners next to ourselves, and Germany also builds good ships. Then comes Norway, then France.

Though the British Empire has not a rival at present either in the possession of shipping or in ship-building, yet the United States of America, with the wonderful energy which that nation often exhibits, and with the natural resources, the iron and coal and wood of their country, bids fair to become a great rival to Britain as a nation of ship-builders and ship-owners. The people of the United States long ago made preparation for this ship-building undertaking. They built ship-yards on the shores of the great lakes as well as along the Atlantic and Pacific coasts. They are now building ships of war and ships for their own commercial trade; and they have even undertaken to build war-ships for Russia and Japan.

Meantime Britain remains master of the seas, and chief merchant and goods-carrier of the world. Whatever the United States of America may achieve in the way of ships and ship-building, may in due time be done equally well by Canada, by Australia, and by other of the greater colonies of our empire. The future does not rest alone with Britain, but with her empire throughout the world.

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GREATER BRITAIN

55. TRADE-ROUTES

If we could see the old merchant sea-routes indicated on a map, we should find that they radiated almost entirely from the Thames or the Humber, with a few from the Forth and a few from the south of England. We should see that the lines from these places went to Norway and Denmark and through the Skager Rak to the Baltic, and particularly to North Germany, to Holland, and to France, mainly to the mouths of the Elbe, Weser, Rhine, and Seine.

And, if we think for a moment, we shall see that London, which is now the greatest centre of the whole world's trade, came to be where it is, and grew to be what it is, because it faced so much of the world's trade across the German Ocean and the English Channel.

If the coasts of Europe had faced Britain from the west, as they actually face her from the east, London, or at any rate the world's greatest trading port, would probably have been in the Bristol Channel instead of in the Thames, and might have been Bristol itself.

But now, as we have before seen, the British Isles have a trading area no longer only to the east and south, but towards all ends of the earth; as though, in anticipation of the age of steam, the British nation occupies a central position around which the great countries of the world are placed. If we take a map of the British trade-routes of the world, we shall find that the lines drawn across the vast oceans will radiate mostly from the Thames.

Before 1869, when the Suez Canal was opened, all our trade with India was conducted by shipping which had to go down the whole length of Africa, round the Cape of Good Hope, and then northward through the Indian Ocean to India or China, or to wherever bound.

Now our ships (steam or otherwise) may leave any port in Britain, pass into the Mediterranean through the Straits of Gibraltar, and sail thence by Malta and Alexandria to Port Said, at the entrance of the Suez Canal. Sailing through the canal to Suez, and thence down the Red Sea to Aden, they pass through the Straits of Babel Mandeb into the Arabian Sea, through which they proceed to Bombay or other parts of India, or to Ceylon, or on to China or Japan.

Or from Ceylon the ships may take a southerly course straight for the western shores of Australia, and so to Tasmania and New Zealand. Or the ships may turn due east from Ceylon, and then, sailing through the Straits of Malacca, pass by the Java Sea and Torres Strait to North Australia or to any part of the Pacific islands.

If our ships which had thus reached Australasia were sailing vessels, they would probably return home in a direction contrary to that by which they came, since by going east instead of west they would have the west trade-winds in their favour, which would carry them some 5500 knots (marine miles) round by Cape Horn and so into the Atlantic home again. If they were steamers, they would probably return the way they came, namely, by the Suez Canal.

We have an enormous trade as well as a very large passenger traffic with the United States and with Canada. Thousands of ships of all kinds are engaged in crossing and recrossing the Atlantic. They leave London, Bristol, Liverpool, Glasgow, or other ports, and they may proceed westward to New York or Philadelphia or other parts of the States, or by a more northerly route to Halifax, or Quebec and Montreal, in the great Dominion.

By the great railways of the United States and Canada crossing the continent from the Atlantic to the Pacific, passengers or goods can be conveyed from New York to San Francisco, or from Quebec to Victoria, and thence again shipped to any parts of Eastern Asia or to the Pacific islands or to our Australasian possessions, or down the west coast of the American continent.

Quebec is closed in the winter with ice, and then Canadian traffic is diverted to Halifax and St. John, which have both splendid harbours open all the year round.

56. NAVAL PROTECTION AND COALING-STATIONS

Since we have always so many ships upon the seas, and these ships are laden with riches in many forms, it must be one of our first cares to see that our shipping, and the goods with which we trade, are protected so far as they can be protected from loss and from harm. For this purpose we have our magnificent navy.

The navy has to keep a clear and safe course through the seas of the whole world for our ships and their burdens; and this is done without fighting, because it is already, and has been for several generations at least, "Mistress of the Seas". That is to say, the British nation is mistress of the seas, and it is the duty of every one of us to desire that it may long be so, and to help that it should be so.

For why, think you, do we not hear of the seas being overrun with pirates as they used to be two or three generations ago? It is simply because the navy, being mistress of the seas, does not allow pirates to exist, but protects honest trade wherever the British flag is found, that is to say, in all the oceans and all the seas.

The British navy does indeed a vast deal more than protect its own ships and its own merchandise. It may without any exaggeration be said to have been, and to be, the protector of all the shipping and trade of the world. It is not alone, however, from pirates and piratical invasions that our naval vessels have to protect the home-land, our colonies, and our commercial shipping. It has also to protect the empire against possible enemies.

So our navy must remain mistress of the seas at all cost. Our empire is now so large that, though our navy be costly, it more than pays us to keep it in the most efficient condition, to see that it holds the first place among the navies of the nations.

Now let us mark, that as our great naval vessels and the more important of our commercial ships are driven by steam, it is imperative that on long voyages our sea-going vessels should be able, repeatedly if need be, to obtain fresh supplies of coal. In order that this may be possible, what are called "coaling-stations" have been, and are being, formed at various places along the great commercial routes the wide world over.

These coaling-stations are ports conveniently situated along the commercial routes at places where coal can be supplied from coal-fields in the neighbourhood, or to which coal can be brought from home and stored. At these coaling-stations exhausted ships, naval or commercial, can refill their coal-bunkers or get supplies of food, and at most of them it is possible to get repairs carried out.

Our multitudinous possessions in the world, particularly our possession of isolated islands, have given us the power of forming a very complete system of such coaling-stations. And since our possessions in many parts of the world supply abundance of coal, as Canada, the Cape, Australia, New Zealand, it ought not to be a difficult matter to keep our coaling-stations well supplied.

If we refer to the ocean trade-routes again, we may note how some of these replenishing stations are distributed.

On our way to the east by Suez we find coaling-stations at Gibraltar, at Malta, at Aden, near the entrance to the Red Sea, at Bombay, in Ceylon, at Trincomalee on the east coast and Colombo on the west, at Singapore, at Labuan, at Canton and Wei-hai-Wei in China.

And in Australasia there are coaling-stations at Cape York in North Australia, at Albany and Sydney in the south, and in the Fiji Islands.

If our ships sail south by the Atlantic to South Africa, they find coaling-stations at Sierra Leone, Ascension, St. Helena, Cape Town, and Mauritius.

Or, if we go west and south-west to the Americas, there is one at Halifax, one in Bermuda, one at St. Lucia, one in Jamaica, and one at Tobago. On the western side of America there is one at Vancouver, another at the Falkland Islands (east of Cape Horn), and several others of minor importance.

57. WHAT WE AS A NATION CAN DO

It ought now to be clear to us that every nation which would be prosperous, which would be well clothed and well fed, and which would take its place among the civilized nations and keep it, must learn exactly the same lessons which we have been learning in these readings.

It must learn the fact that its people must be industrious; that they must till the soil, must rear and tend cattle, must dig and smelt minerals, or its people cannot have clothing, and food, and the common necessaries of life.

It must learn that everything that its people can profitably employ its energies upon must be procured from Nature, wrested as it were by all sorts of arts and contrivances from her hands.

Barren lands must be turned into fruitful fields, and made to yield the things which are most useful, and which such lands can be best made to grow.

Forests must be made to yield useful or marketable timber, or the forest-land cleared and made the pasturage for cattle or sheep.

Dry lands must be watered by artificially-made streams and water-ways led from hills and mountains, or the waters must be stored up in constructed lakes and reservoirs for the drier seasons.

Marshy and wet areas must be drained, and shallow waters and tidal tracts "reclaimed", and made into dry and useful lands.

Minerals or any useful products must be taken from the earth wherever they may be found, and everything useful which can be made of and from them must be made.

Every nation which has learned the importance of these things and how to do them, is building itself up in prosperity, in wealth and happiness.

But if that nation has, with the knowledge of and energy to do these things, the enterprise to look outside its own boundaries for what it can derive for its own benefit from other countries, what it can give in exchange for things which it desires, what it can gather from all the rest of the world to supply its home wants and its home industries, then that nation is doing those things which cannot fail to make its name great and powerful.

But if the sons of that nation, while they go into other lands to trade, can use their eyes and their hands and their brains to see what new things may yet be found, what new useful plants can be grown, what new timber can be felled, what new minerals can be obtained, and if for the sake of these new things of commerce, or for the discovery of new lands for mining or cultivation or cattle-rearing, the sons of that nation are willing to go to the ends of the earth, to brave such cold as that of Labrador or of Klondyke, or the fierce heats of Central Africa, then that nation is on the highway of commerce and enterprise which will make it a nation of commanding eminence, one which other nations will respect for its greatness and power.

These things we have learned, these things as the British nation we can do and are doing. We are what we are to-day by our industry, and by our commerce and our enterprise, and this we shall continue to do and to be with continued industry and courage.

58. NECESSITY AND IMPORTANCE OF MACHINERY

That "necessity is the mother of invention" was never better exemplified than it was during the nineteenth century, and specially in connection with commerce and trade, or with things which make for trade: in machinery for factories, and for hosts of operations where human hands were too few or too slow; in locomotives and steam-ships for the conveyance of goods; and in a multitude of contrivances which showed that necessity had in this wonderful century been indeed the mother of invention.

There was a time when the working-man was dreadfully afraid of any and every sort of machinery, and in years gone by he stoutly opposed the introduction of machines into factories, or for agricultural purposes, sometimes, indeed, smashing up the machines, and even burning down the buildings which contained them.

But time after time the value of machinery has been proved, not only to their owners, but to the working-man at large, and therefore to the whole nation. It is now seen that any great manufacturing firm which keeps to old ways, rather than introduce new and more rapid methods in the shape of new machinery, falls behind in the great battle of business. In that case the workmen are likely also to suffer, their wages being less, for experience has shown that the introduction of up-to-date machinery tends to raise wages.

Now, what is true of a big manufacturing firm is just as true of a manufacturing and trading nation. It is seen that the nation which can invent new, or improve its old, methods of production is the nation which takes the lead, or bids fair to do so, in the world's commerce.

The nation which can best adapt its methods to the ever-new requirements, by the use of new machinery, or by the invention of new methods, is the nation which most readily finds the world's markets.

It is the plain teaching of experience that the world is benefited by the growth of machinery. There is nothing to fear from it; the only fear nowadays is of not having in Britain sufficiently up-to-date machinery.

We still may hear some say that the world would have been better without its machinery. So it might have been if the old slow methods of manufacture and trade were better than those of to-day. But we could not even count the things which the very poorest person can possess to-day, but which we could never have possessed without machinery. Newspapers and books are so cheap that they can be purchased by all. Railway and steamboat journeys can be made at so small a cost that everyone as a matter of course travels about. All sorts of clothing are so cheap that a working-man can, and often does, dress as well as an earl. Carpets and curtains and wall-papers, and all sorts of house decorations and furniture, are so well within the reach of all, that every working-man's home can be, and often is, much more of a palace than were the castles of knights and lords in olden times. All this has been brought about by the great improvements in machinery. These again, it must be remembered, are due to the diligence and intelligence of inventors, of whom a large majority have been of our own race.

The world's present gigantic trade could never have come into existence, and could not now be carried on, without the use of the millions of machines that every day are whirling their wheels in the human industrial hives.

The power of inventiveness is well illustrated in the United States. That branch of the Anglo-Saxon race is even now, in some of its wheat-growing areas, very thinly peopled for its size; and not many years ago the population was much less than it is now.

So, when American farmers sowed their rich acres with corn—sometimes thousands of acres to one farm—they could not find sufficient hands to reap it. Here was the necessity, and the invention came in the production of the reaping-machine.

And now ploughing and sowing and drilling and mowing machines of American invention are to be found all the world over. Such machines we in the old country had invented, though our farmers could get plenty of hands; but the demand for them, and therefore their practical application and continued improvement, was slight here for a long time in comparison to what it was in the United States.

The reaping-machines of to-day not only mow down the corn, but gather it up into bundles, bind them with cord, and cast them out in rows, so that one has only to lift up the sheaves and place them in "shocks". Our engineers now make agricultural machinery on the American models, and supply it to our colonies.

And what has taken place in the United States because of the necessity of things, has taken place, and is taking place, in our colonies to-day, not only in the department of agriculture, but in mining and manufacturing and other departments. And these ways are the mother-country's ways: she has set in the past the example of inventiveness. It is of the utmost importance that our young men of to-day should exert their wits to continue inventing and ever improving machinery and contrivances of all sorts.

59. HOW TO MAINTAIN OUR INDUSTRIAL POSITION

Under all circumstances our duty is to maintain our position as the leading trading empire of the world. This we shall not do by taking it for granted that things will always go on as they are. Other nations, particularly the people of the United States, now manufacture a great deal, and have shown themselves to be clever workers and clever inventors. Thus in some industries, such as machinery construction and the manufacture of tools, the Americans have shown themselves exceedingly clever in inventing improved ways of making things.

But now we do not need to think that our American cousins are really cleverer than we are ourselves. Many of the improvements are the outcome of the peculiar circumstances and requirements of a young and newly-venturing manufacturing nation.

For instance, American firms gladly welcomed our skilled workmen from Britain. To these they gave great encouragement to work in their own way, and, if possible, to introduce any improvements.

It won't harm us if we have to confess that our workmen at home have hitherto had much less of this encouragement to invent new or to improve upon old methods of working than they should have had. Indeed, they have rather been discouraged in their inventive ability, for the reasons that we did not like disturbing what have hitherto been successful methods, and have not therefore always given generous help and encouragement to our inventive workmen.

Further, when one comes to enquire into what we may call *national* encouragement to inventors and improvers upon old methods, we learn that the British inventor has very great difficulties thrown in his way in comparison with what he would find in the United States.

The important fact is this. In the United States a man may secure a patent, that is, a protection for an invention or an improvement, for 20 dollars, that is, about £5, while in Britain it will cost him £104, and then the thing is not so completely done in Britain for the £104 as it is in the United States for £5.

But to carp at obstacles is not the way to maintain our national industrial position, nor is it British-like to allow obstacles to stop our progress. We can, however, learn a lesson in the same spirit in which we have learned many a lesson before, namely, that we must be willing to accept such new ideas and new ways as the great onward progress of industrial arts requires. It does not do for Britain more than for any other progressive nation to become old in her ideas and ways. To become confirmed in them would mean our national ruin.

There is no time to stand still. Our position as a nation requires that we should be fully alive to what is required of us all; and what is required is, that we should make a thorough use of all the means of education which we possess, and we all have at least some opportunity at school.

But if any boy thinks that his education is finished when he leaves school, that boy will never do much toward maintaining the British supremacy in the arts and in trade. For the education that best fits a boy for the position of a member of the industrial British nation begins after he has left school.

And whether he goes into the offices or the counting-houses or the workshops of the British nation, he goes that he may learn to do at least as well as his fathers have done before him. Too many seem to forget that it is a duty to learn every possible thing in any of these positions. Nay, some *seem* to think that after school we should learn as little as possible. This is to be untrue to our nation, untrue to what is absolutely our duty to our nation as well as to ourselves.

And courage is quite indispensable in the maintenance of our national character. In this our fathers have certainly set us the noblest example. We must have courage, we must be brave under all circumstances. We might with advantage take this noble word "courage" to be our national watchword.

60. "WHERE MIGHT IS RIGHT"

While we are a small country at home, that is, in Britain, and while we are a crowded people in our little islands, and while we are an essentially busy and practical people, it is at all times difficult for us to realize the relationship and the condition of the peoples who are dependent upon us.

Some of these people are our own blood-relations, who speak our own language and possess our manners and customs; some are peoples who in tongue, manners, and customs are very different from us. Together we make up a world-wide empire which brings with it the gravest responsibilities.

It is difficult for us at home to understand what our colonies and dependencies are like, though it is the duty of every member of the English-speaking race to understand, so far as is possible, the conditions and possibilities of every part of that great empire in which he takes a rational pride.

As we have seen, there are reasons why we have such vast possessions, and are able to maintain our possession of them. It will be good for us to try and look at ourselves as the world regards us, namely, as a great invading and possessing nation. We have to prove ourselves to be justified in what our race has done and in what it is now doing, for we have a part, and a very large part, in the history of the world now being made. The future will say whether we have been justified in our undertakings and attainments.

Let us take, as an example of the results of our rule, one of our smaller dependencies. Let us take Ceylon, which is a well-known island country, not too big for our present purpose.

This island has been under British rule for just over one hundred years. We took it from the Dutch in 1796, who had taken it from the Portuguese as early as 1658.

The Portuguese were certainly not successful masters of Ceylon, nor were the Dutch much more so. Britain's rule in this case was not (as it never is) to make as much as possible by taxing a conquered race, but to introduce order, justice, inland peace, and industry. The King of Kandy, to whom we allowed the nominal sovereignty of the island, had to be deposed for his excessive cruelties in 1815. From which time, with exception of a revolt in 1817, the island has remained peaceful and prosperous.

Its population is now somewhat over 3,000,000, mainly natives, with a good many from the mainland of India, and a certain number of British. During the Portuguese and Dutch rule Ceylon had decreased in population, but its rise has been rapid during the last half-century.

Under British rule forests, marsh, and jungle have assumed the cheering beauty of cultivated areas; the people are paid for their toil, are not oppressed, but are happy and content. They have become obedient to rule and order; in a word, have become civilized according to our view of what that word means.

One naturally asks what would happen in a country like Ceylon, where the British have done so much, if they were to give up their rule. Most likely the whole land would relapse again into barbarism under some heathenish and despotic ruler, in whose hands human life would be counted nought, and justice and honour would all be thrown again to the winds. So long as this is a fair picture of our procedure as rulers in the world, so long is our career an honourable one, and the world will continue to be benefited by our extension and progress. This is where might is right.

61. OUR COLONIES AND OURSELVES

If Britain had not planted her children, as we know she has done, in many parts of the world, our condition at home would have been at the present time very different from what it is. Our home industries would have famished for the want of markets for their produce. We could hardly have maintained even our former trade with foreign nations in their newly-awakened energy, and their openly-expressed and determined opposition to us, both in manufacture and trade.

But in planting our colonies over the world we have provided for the future growth of our trade, inasmuch as with the expansion of our colonial possessions there can naturally be expected an equal growth of our commercial relations with them.

The value of our possessions and dependencies may be illustrated thus. Of all the goods imported into the following countries, the percentage gives the share of our home trade with them:—India, 70 per cent; Australasia, 43 per cent; Cape of Good Hope, 82 per cent; Canada, 38 per cent; British West Indies, 44 per cent; Egypt, 50 per cent.

These countries are markets which we have made our own, and we can be sure of our markets in them, but we could not depend upon such independent countries as Germany, or France, or Russia, nor upon their colonial possessions. Even though the United States are an English-speaking people, our exports to them are not increasing, and are only 24 per cent of their imports.

We have seen what our relations are with such a country as Ceylon, which well represents our relations with India and with other parts of Asia, with Egypt, and other countries. Let us endeavour to see what are our relations with our colonial possessions, which are mainly inhabited by our own folk.

Well, now, our policy with them is not one of a dominating and oppressing influence. We do not demand tribute right and left, but we give them their own home government under a viceroy or other representative of the British crown. We encourage industries of all possible kinds; we are willing, as we often do, to bear great colonial expenses; we lend them money with which to undertake great public works, such as clearing forest-land, draining, and canal, railway, and road making. Our policy with our colonies is always to encourage industry, order, and progress; and the example of the mother-country has been well followed, and her hopes realized.

But we do more than this: we have to take our colonies under our protection; in figure, much as a hen takes her chickens under her wings; actually, by the maintenance of big armies and navies, by the yearly expenditure of millions in money. We have to protect our own trade and theirs. We have to see that they dwell in safety and peace. Let us take as an illustration of how necessary it is for us to be an imperial protector of our colonies of Australia. It is well put in the following words of an Australian writer in the *Spectator*:—

"Let your readers imagine a population a little less than that of London, scattered over a continent almost equal to the whole of Europe. It is a continent of sunny skies, and soft airs, and clear landscapes; a land of only half-known mineral wealth, of wool, and wine, and wheat, and fruit, and of innumerable flocks and herds. It will grow anything. It offers such a field for the growth of a new nation as the world nowhere else possesses. There is space for nearly three Italies in New South Wales, more than three countries like Austria could be packed into West Australia, three Spains into Queensland, and more than three Frances into South Australia. And this whole continent is held in fee by a handful of the English-speaking race! We could not hold it for a day but for the shelter of the British flag!"

SUMMARY

ON TRADE AND PRODUCTIONS

COMMERCIAL GEOGRAPHY. To study the conditions under which the various articles useful to man are produced in different parts of the world, and how and why they are carried from where they are produced to where they are consumed, is to study **commercial geography.**

1. **Town Market.** If we visit a town market, we see the country people selling their butter and eggs and corn to the merchants, and with the money they get, buying from the townspeople boots and shoes, clothes, tools, and other things they need. This exchange of goods of which the particular owner has more than he needs, for goods of which he has not a sufficient quantity, is going on all over the world, not only between individual and individual, and between town and country, but between nation and nation.

2. **A Nation's Market.** Owing to the variety of the natural conditions on the earth, one country produces a desirable article which another does not produce, while the second has a like advantage over the first with respect to some other useful article. In such a case trade is sure to spring up, but it can only spring up if each produces more of its special product than it uses itself. The conditions in one district are often better adapted for the production of some particular article than for the production of any other. It is greatly to the general advantage, therefore, for each of the particular districts to produce the article which it is specially suited to produce, and then to exchange. In this way the productive advantages of each are to a certain extent made the advantages of all. **Trade,** thus understood, is seen to be a means of increasing the number and

improving the quality of the useful things men can procure by means of a given amount of labour.

3. **What Man Trades With.** Man finds the raw material for his trade in the earth. The raw material is in truth an earth gift. Man can create nothing, but by his skill and labour he can so alter the forms of natural objects as to make them fitter to satisfy human wants. Animals and plants even can be greatly modified by him, and made, by attention to breeding and proper selection of seeds, much more useful than they were before. It is this mastery over nature that distinguishes the civilized man from the savage. As he succeeds as a producer his desires increase and he becomes also a trader, exchanging his surplusage for things he wants.

4. **Climate—I.** On the climate, that is, the general character of the weather of a district, its plant and animal productions largely depend. Every district has its particular climate; but as a general rule we may say that as we proceed from the *Equator* towards the poles, that is, as we go from *low* to *high* latitudes, the climate becomes *colder*. In a similar way, as we rise above *sea-level*, that is, increase our *altitude*, the climate becomes *colder*. The change in this case is much more rapid; a mile upward causing roughly as great a change in the mean annual temperature as a thousand miles towards the pole horizontally.

5. **Climate—II.** Heated air and moist air are lighter than cold air and dry air, and whenever the air in a district is heated, or contains a great amount of vapour, the lighter air rises and the colder air from the surrounding districts rushes in to take its place. Roughly, it may be said that the neighbourhood of the equator is warmer than other parts. The air there gets more heated and rises up, and there is a steady set of air towards the equator both from the north and from the south. Owing to the rotation of the earth these air-currents or *winds* seem to blow steadily from the north-east and from the south-east, and are known as the *North-east Trades* and the *South-east Trades*. Sometimes, owing to the position of the land masses, and to the extent to which these when heated affect the air, the trade-wind blows beyond the equator, and is then known as the *Monsoon* or seasonal wind. Thus, in the northern summer the south-east trade blows north of the equator in

certain regions, and is known as the *South-west Monsoon*; and in the southern summer the north-east trade blows south of the equator as the *North-west Monsoon*. The currents of air, the **winds**, caused by the difference of temperature and of the amount of water-vapour of the air of different parts, are of the utmost importance to man. They cool the warm and warm the colder regions, and at the same time distribute the water-vapour over the surface of the land in the shape of rain. But for these winds the earth would be an uninhabitable desert.

6. **Climate—III.** Ocean currents, like air currents, are very important. They have three main causes.

(1) **Thermal circulation**, the result of tropical heat and polar cold, which produce warm surface currents towards the poles and cold bottom currents towards the equator.
(2) **Wind circulation**: the regular or trade winds produce surface or drift currents either permanently or at certain seasons.
(3) **Circulation from evaporation**: a current is produced when evaporation of water is excessive, as into the Mediterranean from the Atlantic, the loss by evaporation requiring to be made good.

RESULTS OF OCEANIC CIRCULATION: (*a*) a modification of the temperature of the polar regions, the climate becoming warmer than it would otherwise be; (*b*) a similar modification of equatorial temperature in the direction of greater coldness; (*c*) the spread of animals to regions in which they would not otherwise occur; (*d*) certain parts of the world compared with others are rendered much more suitable as an abode of man, for example, Britain as compared with Labrador.

7. **Climate—IV.** The climate of a place is greatly influenced by its nearness to or distance from a great body of water. More important still is its height above sea-level. **Quito**, almost on the equator, but nine thousand feet above the sea, enjoys a perpetual spring; and in South Africa, though the climate of the coast region is exceedingly hot, that of the table-land is cool. Mountains in some cases shelter from cold winds, in some they intercept warm winds, and in others they act as condensers of the moisture in the air and increase the rainfall. Often the

country on one side of a mountain chain is exceedingly well watered, and the country on the other a desert, because the winds in crossing the mountains have given up their moisture, and blow across the country on the other side only as dry winds. Compare the southern and northern side of the Himalayas, the eastern and western side of the Andes of Peru, the western and eastern side of the coast range of the United States.

8. **The Seasons.** The seasons greatly add to the variety of the natural productions of a region.

If the earth did not move onward, but simply revolved upon its axis, we should have day and night, but the seasons would be the same all the year round.

THE EARTH'S ANNUAL MOTION. The changes of the seasons are due to the fact that the earth is not only spinning round and round upon its own axis, but is whirling onwards through space in a large circular path round the sun. The ring or path described is the **earth's orbit**, and the exact time which the earth takes to make one revolution is **365 days, 5 hours, 48 minutes, 48 seconds.** The earth does not spin with its axis upright, in which case also there would be no change of seasons, but it has a slight slope or inclination, the axis pointing almost straight to the pole-star. This inclination of the earth's axis is the cause of the changes in the length of day in different latitudes, and is partly also the cause of the seasons.

At two periods of the year, March 21 and September 22 (called the **equinoxes** or times of equal night), the days and nights are of equal length in both hemispheres.

Around the poles, in the Frigid Zone, the climate is cold, the ground is always covered with snow, and the two seasons of the year are the long day of feeble sunshine and the long night of gloom.

In the Temperate Zones the difference of the seasons is more marked; the cold of winter gradually gives place to the mild weather of spring and the warmth of summer, which is succeeded by the cool weather of autumn, leading on to a return of winter.

The parts of the earth about the tropics are hot, because the rays of the sun fall directly upon them.

9. **Climate and Productions.** Wheat requires more heat than barley, oats, or rye. It is the most valuable of all the grains of the temperate regions, and wherever it is grown must have its early growth in a cool part of the year. In the warmer regions where it is grown, it is a winter or early spring crop, and as we approach the poles the harvest occurs later and later. The lines that mark the northern or southern limit of different plants do not agree with the lines of latitude, for the local climate depends on a variety of circumstances. Wheat, for example, grows much farther north in the west of North America than in the east, this being largely due to the differences in temperature of the ocean currents that wash the respective shores. Similarly, the northern limit of wheat in Norway is much farther north than in Russia. The long and severe winter of Canada causes the wool of the sheep that thrive there to be coarse in comparison with the wool of the Australian sheep. This is only one of the many instances that might be given of the changes produced in plants and animals by changes of climate.

10. **Mineral Resources.** The mineral resources of a country have an important bearing on its industry and prosperity. Wherever there is coal an industry may grow up, as the coal may be used for smelting ores or for driving machinery. Where the ores of metals are found they may be smelted, and so an industry may spring up, or they may be exported to where coal abounds; but where the coal and the ore both abound, a manufacture of the metal is sure to spring up. It must also be remembered that wherever a metal is produced, such say as iron, a great variety of manufactures connected with it are sure to arise. With regard to any country, it is safe to say that its prosperity depends on its natural resources, and on the diligence and capacity of its inhabitants, that is, on their knowledge and their power to turn the natural resources of their country to account.

THE ANGLO-SAXON TRADING COMMUNITIES.

11. **The British Empire—I.** The great conquering nations of olden times became powerful by plundering the countries and degrading the people conquered. The Spaniards in modern times

followed their example; but other European nations, notably the British, have, in seeking extension, sought rather outlets for their commerce or fields for colonization. Hitherto Great Britain alone has been entirely successful as a colonizing country, and the vigorous young communities springing up in all parts of the earth, and devotedly loyal to the mother-country, are the strongest assurance of the wisdom which has hitherto guided her efforts. The British Empire now includes nearly a quarter of the land-surface of the globe. With the United States and its colonies, about one-third of the whole land-surface is thus under the rule of the Anglo-Saxon race.

12. **The British Empire—II.** The British Empire includes possessions in every part of the world. There is no continent over part of which the British flag does not wave, and the great continental island of Australia is entirely British. While Great Britain and Ireland have an area of a little more than 120,000 square miles, the area of the British Empire is over 13,000,000 square miles; and while the population of the British Isles is a little more than 40,000,000, that of the British Empire considerably exceeds 400,000,000. If we add to this the population of the United States and her colonies, we find that one-third of the entire human family are under the control of the Anglo-Saxon race. From the survey we learn that a large and steadily-growing proportion of the earth's inhabitants are speaking, or learning to speak, our English speech.

13. **The British Empire—III.** The result of the struggle between this country and Spain, and this country and France, for the dominion of the West and of the East, shows that it is good for nations, as for individuals, to be put on their mettle. The defeat of the Spanish Armada was followed first by a short period of privateering attacks on the Spanish settlements, and then by the establishment of regular British colonies and of trading factories. The growth of the empire has all along been promoted by great trading companies, such as the East India Company, the Hudson Bay Company, and the South African Chartered Company.

14. **The Commercial Empire.** By the commercial empire we mean the great trading concern of "Bull & Sons", the biggest business concern the world has ever seen. John Bull's

eldest son, "Jonathan", has set up in business for himself, but he still does a larger business with the parent firm than with all the rest of the world. We have seen already that the British Empire includes one-fourth of the land-surface of the globe and more than one-fourth of its inhabitants. In proportion, it is, as might be expected, much better equipped for carrying on trade than the rest of the world. Out of every hundred tons of shipping in existence Great Britain and her colonies owns fifty-five; and if steam-shipping only be taken into account, the advantage the empire enjoys is even greater.

15. **The Home Land—I.** The British islands are comparatively small in size, and though fertile are unable to produce sufficient food for their large population. They have abundance of coal and iron, an extent of coast-line equal to half that of all Europe, many excellent harbours, many miles of navigable river and canal, and, in proportion to their size, the largest amount of railway of any country in the world. The people are industrious and enterprising, and are largely engaged in the manufacture of goods, which they exchange with other countries for food-stuffs, &c. If we look at a commercial map of the world, or at a map of the world showing the land and water hemispheres, we shall see that Great Britain is almost exactly in the centre of the land hemisphere; in other words, that her position for trade is far and away the best of any country in the world.

16. **The Home Land—II.** If we regard the Anglo-Saxon race as a great trading firm, we may consider the United States and our dependencies as junior partners, and Great Britain as the senior partner. In this case we may regard London as the chief warehouse and counting-house, where goods from all parts are brought and through which exchanges between the various parts are conducted. But London is more. It is the centre of the world's banking business, the commercial capital of the earth. The population, the imports and exports, of this great city, are enormous; but it is not by any means the only commercial centre in Britain. Glasgow, Liverpool, Bristol, &c., are all important commercial as well as industrial centres.

17. **The United States—I.** The United States is a compact country almost as large as Europe, with a coast-line of 13,200 miles, besides 3620 miles of lake shores. Its great size, its

many navigable rivers and lakes, its vast plains and varied climate, give its people great opportunities for expansion. The country consists of three natural divisions—the **Pacific Highland** with its coast region, the **Mississippi Valley**, and the **Atlantic Highland** with its coast region. The **Pacific Highland** consists of a broad, and in some parts waterless, plateau stretching from the coast range to the Rocky Mountains. These form the western boundary of the great Mississippi Valley, which stretches from the Rockies to the Appalachians, as the **Atlantic-Highland** edge of the valley is called. The valley includes about half the area of the United States, and is crossed by many navigable rivers. The Atlantic-Highland region, with its coast plain, is much narrower than the Pacific-Highland region, but is interesting as being the part first settled. The climate, and therefore the productions, are exceedingly various. Generally the extremes, both of heat and cold, are greater than in Europe. The extreme northern edge has a mean annual temperature similar to that of England and the north of France, the north-central states to the middle and south of France, the south-central to that of Southern Spain and the Mediterranean, and the southern to that of Northern Africa.

18. **The United States—II.** The upper part of the Mississippi Valley is the great **wheat region** of the United States. In the middle and southern states **maize** is grown, and in the extreme south **rice**. Virginia and the neighbouring states are noted for their **tobacco**. In the southern and south-eastern states **cotton** is the most valuable commercial production. California is the great fruit-growing region, and promises to become the orchard of the world. Fruit is also grown largely in the central Atlantic states, oranges and lemons in Florida, the vine almost everywhere in the centre and south, and apples and pears in the New England states. Rich forests are found in the north, among the Appalachians, and on the Pacific slopes. With such endless variety of vegetable productions the United States are, as might be expected, noted for their cattle and horses, their sheep and pigs. Innumerable herds of cattle graze on the plains in the western part of the Mississippi Valley, countless sheep cover the sides of the hills, troops of horses roam over the prairies, and vast droves of hogs are fattened for bacon.

With regard to mineral wealth too, the United States has been bountifully dealt with by nature. Her coal-fields are very extensive, widely scattered, and practically exhaustless; she is one of the chief gold and silver producing countries; she possesses the richest iron mines in the world; while her oil-wells, her natural gas, and her supplies of other minerals give her great manufacturing advantages. More iron is produced in the States than in Britain, and in the manufacture of certain kinds of machinery, particularly electric, the States are ahead of the mother-country. In the States there are more miles of railway than in Europe, and this, with her splendid natural water-ways, is of great commercial advantage.

19. **Canada—I.** The British possessions in America are of great extent and importance, and include the Dominion of Canada, Newfoundland, and the West India Islands. Canada is of vast size, and in the hands of its energetic inhabitants its great natural resources are sure ultimately to be fully developed. It may be divided into four natural regions: (*a*) The **Woodland region**, extending from the Atlantic to Lake Winnipeg, and including nearly all the older provinces. Near Lake Winnipeg its southern border bends sharply towards the north-west, so as to form the eastern and northern boundary of the prairie regions. The **Prairie region** lies between the woodland region and the Rocky Mountains, and is one of the finest agricultural regions in the world, of which it promises to be, by and by, the chief granary. The **Rocky Mountain region** is covered with valuable timber. The Barrens form a comparatively narrow strip round the coasts of the Arctic Ocean and Hudson Bay. With the exception of this narrow strip in the north-east, Canada lies wholly in the temperate belt. The water-ways of Canada are splendid, her climate healthy and exhilarating, and her natural resources boundless.

20. **Canada—II.** Canada has four great sources of wealth: her **agriculture**, her **forests**, her **fisheries**, and her **minerals**. Wheat, barley, oats, and other kinds of grain are grown in the parts cleared in the older provinces, and millions of acres are still waiting for occupation. In Manitoba and the neighbouring parts of the North-west there are millions and millions of acres of the finest wheat-land in the world waiting occupation. Canada

is also a great fruit-producing country, and the vine is grown successfully in Ontario. In dairy farming, and more particularly in the production of cheese, Canada now takes a foremost place. In her boundless forests Canada has another exhaustless source of wealth. She exports largely timber of all kinds, pearl-ash, wood-pulp, &c.

21. **Canada—III.** Her fisheries give employment to between forty and fifty thousand men, and are among the richest in the world. She has long been one of the chief fur-producing countries, and in the export of cattle she promises to outstrip even the United States. Her mineral wealth seems almost boundless, including iron, nickel, copper, silver, gold, petroleum, &c., in Ontario; coal and gold in Nova Scotia, New Brunswick, British Columbia, and the North-west. By means of railways and her splendid water-ways the country is being rapidly opened up, and promises to become one of the wealthiest, most populous, and most flourishing in the world.

22. **Other British Colonies in America.** NEWFOUNDLAND is a large island, one-third larger than Ireland. It was long represented as barren, and held chiefly on account of the valuable fisheries on its shores; but at least one-fourth of the surface is fit for cultivation. Its climate is colder than that of Canada, though not subject to such extremes. It possesses great mineral resources, and is by many thought likely to become one of the most valuable, as it is the oldest, of Britain's foreign possessions. The island is particularly rich in **iron** and **copper**, and only needs the exclusion of the French, or the restriction of their claims by a fair and common-sense interpretation, to enter on a path of progress.

The **Bermudas** are a naval station and health resort; and the British **West India Islands**, once the richest jewels in the British crown, have suffered sadly from the abolition of slavery and from the British adoption of free-trade. They still produce sugar, spices, and tropical fruits, but they are far from being either as prosperous or as populous as they were in the olden time. From **Honduras** we get most of our mahogany; and while the coasts of **British Guiana** are rich sugar-producing lands, much of the interior is undeveloped, but is said to be rich in gold and other minerals.

23. **India.** India comprises India and Burma, and for our purpose we must consider with it Ceylon. It extends for about 2000 miles from east to west, and about the same distance from north to south. Much of it lies within the tropics; part of it consists of a peninsula, chiefly plateau, called the Deccan, part of it is continental, and on the north and west are lofty mountain regions. The climate is therefore exceedingly varied, and the vegetable and animal productions not less so. From India now we get much of our tea, our coffee, spices, and tropical fruits. It produces opium, indigo, cotton, and sugar, and in the **North-west provinces** wheat is grown. The forests yield teak and other valuable timbers. Among the wild animals are the tiger, lion, leopard, elephant, and wild boar. Poisonous reptiles are very destructive of human life, but locusts are the greatest plague of the country, and, as we have seen recently, the greatest drawback to its prosperity is the uncertainty of the periodic rain (monsoon), the failure of which causes famine and wide-spread misery.

India has numerous canals for irrigation and for water-ways; but the country's resources are not half-developed. The number of miles of railway open in India is only about the same as in the British Isles, while its area is nearly fifteen times, and its population eight times, that of Great Britain and Ireland. Britain has other splendid possessions in the East, including the Straits Settlements, North Borneo, Hong Kong, and Wei-Hai-Wei.

24. **Australasia—I.** British Australasia includes, besides Australia, Tasmania, and New Zealand, New Guinea, the Fiji Islands, the Solomon Islands, and others in the South Pacific, the total having an area a little less than that of Europe.

The great island continent of **Australia**, with an area of about twenty-five times that of the British Isles, has a population ten times less. Even this is remarkable, seeing that the first settlements were made on its shores little more than a hundred years ago. In a country so large, the climate is necessarily various. It is generally healthy, but the northern half lies in the hot or tropical belt, and want of rain is occasionally severely felt. The coast is for the most part fertile, but the rivers are comparatively small and fluctuating.

The productions are varied, including, besides tropical and semi-tropical produce, most of the productions of Europe. Much of the land is splendid grazing, and sheep, cattle, and horses are at present Australia's chief sources of wealth. Yet much of the country, especially of the southern parts, is suitable for cereals, and fruit and vine growing, and the production of wine promises to become an important industry.

25. **Australasia—II.** The forest wealth is enormous, though inferior to that of Canada. In mineral resources Australia is one of the richest countries in the world. Besides the precious metals **gold** and **silver**, in the production of which it ranks with South Africa and America, iron, copper, lead, zinc, and quicksilver are found. Diamonds are also found in Australia, and it posseses extensive fields of coal.

TASMANIA. The area of Tasmania is about five-sixths of that of Ireland. The surface is very diversified, and much of it exceedingly fertile. The climate is so healthy and mild that Tasmania is sometimes spoken of as the sanatorium of the Southern Seas. Its mineral wealth is great, and includes, besides **gold**, tin, silver, and coal. Fruit-growing is becoming an important industry.

NEW ZEALAND. The area of these islands is only a little less than that of the British Isles. Their surface is diversified, their soil fertile, their climate mild, and one of the healthiest in the world. As in Australia, stock-rearing, agriculture, and mining are the chief occupations. Though little more than half a century has elapsed since the first settlements were formed in New Zealand, the population, exclusive of natives, already exceeds three-quarters of a million.

26. **Africa.** Fully a third of this great continent is directly or indirectly under British rule. On the east, from the mouth of the Nile, British authority extends southwards to the great lakes. It is here interrupted by German East Africa and the Congo Free State; but it begins again at the south end of Lake Tanganyika, and thence is continued to the southernmost point of the continent. On the west, Sierra Leone, the Gold Coast, and Nigeria form part of Britain's tropical dominions, yielding ivory, india-rubber, gums, spices, and gold-dust.

But it is the settlements in the south that are true colonies.

These are of vast extent, and possess boundless natural wealth. In South Africa the ground rises from the coast in terraces, and though the coasts are in some parts hot, the climate inland is suitable for Europeans. As in Australia, want of water is the chief drawback; but the land is fertile, and wherever there is water rich crops of almost every kind can be grown. The mineral wealth of South Africa is enormous, and includes coal, gold, diamonds, copper, and iron. The gold-fields are the richest in the world. With its healthy climate and abundant resources South Africa may be expected by and by to rival Australia or Canada, but it will always have a difficulty to contend with in the large native population.

SOME COMMODITIES OF TRADE.

27. **Coal—I.** Great Britain is rich in coal-seams that can be easily got at, and the existence of these and of plenty of iron-ore in their immediate neighbourhood have had much to do with giving to her manufacturing and commercial pre-eminence. Of coal Great Britain produces annually over 200,000,000 tons, worth at the mouth of the mine or quarry between £60,000,000 and £70,000,000 sterling. She exports about 50,000,000 tons, or more than all the other coal-producing countries together.

28. **Coal—II.** Some authorities have urged that at the present rate of consumption our coal-fields will be exhausted in a comparatively short time. Others contend that improved methods are sure to enable us to find and utilize seams of coal that lie at a greater depth than those now worked. Nearly all our colonies and possessions are known to contain coal, though in some cases the actual areas of the available coal-measures have not yet been ascertained. We know that the coal-fields of Canada, India, Australia, and South Africa exceed in their united area even the coal-fields of the United States, and these and the coal-fields of the United Kingdom, that is, the coal-fields in the hands of the English-speaking race, form more than half the whole area of the world's coal-fields.

In round numbers the area of the coal-fields of the United States is reckoned at 200,000, of Canada at 100,000, of Australia and South Africa at over 50,000 each, and of India at nearly 40,000 square miles.

29. **Iron—I.** The production of crude and wrought iron, and the manufacture of iron and steel goods, have long held an important place among English industries; but it was not till it was found possible to smelt iron with coal that the English production of iron began to increase rapidly. Though the first works for smelting iron with coal were put up at Carron in Stirlingshire about the time of the capture of Quebec, it was not till the beginning of the nineteenth century that a great demand for iron and steel began to spring up. Then Britain took the lead, and for more than half a century was the only great iron-producing nation in the world. During the last fifty years other nations, and more particularly the United States, have also become iron-producers; and though the quantity of iron produced in Britain has steadily increased, it no longer now holds the first place. The United States now produces more than the mother-country. Yet our production of iron and steel has grown so rapidly during the last half-century that the value of the steel and iron exported now is £10,000,000 more than the value of all the iron and steel produced forty years ago.

30. **Iron—II.** Britain now imports iron-ore largely, though she still produces enormous quantities from her own fields. It is with iron as with coal. The countries under the English-speaking race have enormous stocks of the raw material. By comparing the statistics of production, we find that of the total iron and steel produced almost three-fourths are produced by the English-speaking peoples.

31. **Manufactured Iron, Machinery, &c.** Iron and steel are now used for endless purposes, many of which would have been undreamt of thirty or forty years ago. They are used for buildings, bridges, utensils, ships, and machinery of every description, and an endless stream of these things is flowing from the workshops of Britain to all the ends of the earth. There is no part of the world where Birmingham hardware and Sheffield cutlery may not be found. Britain builds ships for the rest of the world, and her engines, her locomotives, and her reaping-machines are sent to all quarters. Still, her best customers are her own colonies and possessions.

32. **Gold.** The almost universal use of gold as money, and its general recognition by the trading communities of the world

as the standard of value (that is to say, the common measure in which the values of the various exchangeable commodities must be expressed, in order to be compared), have caused it to be sought after with more eagerness than other commodities. Within the last fifty years the world's supply of gold has been more than doubled, and it is remarkable that the great gold finds of that period have been in countries under the control of the English-speaking race—Australia, &c. At present the world's great gold-producing countries are Australasia, South Africa, the United States, Russia, and Canada. Gold discoveries lead to the rapid settlement and development of new countries.

Gold as a standard of value and medium of exchange is a great labour saver. But it must not be forgotten that the world's present business could never be carried on if money changed hands in every transaction. Notes, cheques, bills, &c., are means of still further saving labour, and these admit still of great practical development.

33. **Silver and Copper.** Silver, like gold, is used as money, and like gold too, is greatly prized. It is much used by those who can afford it for such domestic articles as spoons, tea-pots, candlesticks, &c. Silver has relatively greatly declined in value in recent years owing to the discoveries of rich mines in the United States, Australia, Canada, South Africa, and elsewhere, and the comparative cheapness at which it can be produced.

Copper is, next to iron, the most useful of the metals. With tin it forms the alloy **bronze**, which is used for our coins of smallest value and for ornamental purposes, for the bearings of machinery—especially in the form of phosphor bronze—for guns and bells. Copper itself is made into pipes, boilers, &c., and is used in connection with the telegraph, telephone, electric light and traction, &c. With zinc, copper forms the widely-used alloy called **brass**. Copper is got in Cornwall, Canada, Australia, the United States, and elsewhere. At present we import considerable quantities of the ore from Chili and Spain.

34. **Tin, Nickel, Lead, Zinc.** With copper, tin forms a useful alloy. The metal itself is largely used for covering the inside of domestic utensils, whether of iron or copper. The reasons for this is that tin is not much acted on by vegetable acids or by the air. We get our chief supply of tin from the Straits Settlements, Victoria, New South Wales, and Tasmania.

Nickel, like tin, is largely used for plating other metals, and for the armour-plates of our ships. Our chief supply is from Canada.

Lead is exported in the form of piping, and we import much ore from the United States and Australia.

Of **Zinc**, like lead, we import ore, besides what is produced in the mines of Wales, Cumberland, &c. The metal is largely used, like tin, in the form of a thin coating for iron. The iron so coated is known as galvanized iron, and is employed for making utensils for roofing, and even for entire buildings.

35. **Wheat** is the most valuable of vegetable productions, the most useful of the grasses. In Britain it is the staple food, but Britain produces only about one-third of the quantity she uses. In round numbers Britain imports about 5,000,000 tons of wheat yearly, and produces less than 2,000,000, that is, if we reckon the flour imported in its equivalent of wheat. The value of the wheat and flour imported does not fall far short of £40,000,000 sterling. Most of the enormous quantity of wheat imported we get from the United States, Canada, and India, but considerable quantities are also imported from Russia, Argentina, and other foreign countries. The increase in wheat production in the colonies has been steady, and is sure to continue. Canada possesses enormous uncultivated areas of the finest wheat-growing land in the world, and Australia, New Zealand, and South Africa are all sure to be large wheat-producers.

36. **Other Cereals: Oats, Barley, Maize, Rice.** Besides wheat, we import enormous quantities of barley, oats, and maize. All these, except the last, are grown also in the British Isles. Luckily for man, each of the cereals, though it grows best in one particular zone, is found to flourish through a considerable range of temperatures. Generally, oats and barley prefer colder and damper climates than wheat; and rye, though it cannot be grown so far north as barley, is largely cultivated in the north of Europe. Maize, on the other hand, requires a warmer climate than wheat, and rice needs great moisture as well as great heat. Maize is largely used for feeding cattle. Though we at present import grain largely from foreign countries, our own colonies and possessions could, if they were developed, supply far more than their own wants and ours. Indeed

the British Empire with the United States bids fair to become the granary of the world.

37. **Butter, Cheese, Eggs.** Our imported butter costs us about £16,000,000 a year, and of that less than £2,000,000 go to our own colonies, though they might supply our wants over and over again. We pay Denmark yearly about £8,000,000 for butter. We import yearly cheese to the value of £5,000,000, £3,000,000 worth of which comes from Canada and £1,000,000 worth from the United States. We spend yearly about £4,500,000 in eggs, which we buy chiefly from Russia, Denmark, Germany, Belgium, and France. The importation of eggs from Canada has of late been increasing rapidly, and there can be no doubt that with proper attention our own colonies could easily supply all our wants.

38. **Tea and Coffee** are now so generally used that we are liable to forget that the use has almost entirely grown up in the last 200 years. Till comparatively recently most of our tea came from China, now more than nine-tenths of what we import comes from India and Ceylon. Coffee is imported chiefly from foreign countries, especially South and Central America, but the British colonies and possessions are capable of producing all the coffee we need.

39. **Sugar and Jam.** From foreign countries we import refined sugar in various forms to the value of over £10,000,000, and unrefined to the value of £6,500,000. From our own colonies the sugar imported is worth less than £1,000,000. The cheap sugar which we enjoy, owing to the bounty paid by foreign countries to their sugar exporters, has brought about almost the ruin of our colonies in tropical America. At present these are forced to look for a market for their cane-sugars in the United States. They have also had to turn their attention to growing fruit and other things for which their climate is suitable. The extreme cheapness of sugar in Great Britain has led to quite a new industry springing up in Britain in the manufacture of jams and marmalade, and of confectionery.

40. **Fruit—I.** A few years ago all our imported fruits, except a few apples, pears, and plums from Normandy and Northern Europe, came from the shores of the Mediterranean, and we had

them fresh for only a short period each year. Now, owing to improved methods of packing, canning, and storage, we import fruit from all parts of the world, and have it fresh nearly all the year round.

41. **Fruit—II.** Most of our colonies, as well as the United States, are suitable both in soil and climate for the production of fruit. It is only in California, however, that we see what energy and intelligence can accomplish in making such resources available. There, enormous quantities of fruit of all kinds are grown, and, "canned" or "dried" or in a fresh form, are sent to all parts of the world. Yet Canada, South Africa, the Australian Colonies, and New Zealand are all equally well suited for fruit-growing, some parts of them even more so, and a great trade in fruits is already springing up between the mother-country and these colonies.

42. **Live-stock Trade.** Two-thirds of all the live cattle sent to the London market come from the colonies or foreign countries, almost entirely from the United States, Canada, and the Argentine Republic. From Europe, from which fifty years ago the entire supply was got, we have ceased to import live cattle. Argentina sends most of the live foreign sheep to the London market, and foreign sheep now form two-fifths of the whole. The States and Canada supply us with cattle, but many farmers, especially in the North, are anxious to be allowed to buy Canadian cattle for fattening, as they at present buy Irish. Horses we import chiefly from the United States and Canada, but the Canadian share in this trade is sure to grow rapidly.

43. **Cold Storage.** The machinery which has been devised for producing and maintaining a low temperature, enables fresh meat, fruit, and other things which could formerly only be used in the countries that produced them or in their neighbourhood, to be carried all over the world, and delivered at markets thousands of miles off in as good condition as if they had come only from the neighbouring county. In this way the beef and mutton, the butter, the apples, pears, peaches, and grapes of Canada, Cape Colony, and Australasia, are enabled to be brought to our markets in good condition.

44. **Dead-meat Trade.** Owing to the greater rapidity of transit, and to the application of "cold storage", there has been

in recent years an enormous increase in the dead meat imported into Britain. Twenty years ago the value of the live cattle, sheep, and pigs imported was as great as it is now, but in that time the value of the dead meat has nearly doubled. In round numbers, Britain's meat bill for the year is about £40,000,000 sterling, three-fourths of which is for dead meat. Of dead meat we import a fair share from our own colonies, and a very large amount from the United States. This trade with the colonies is likely to increase greatly. **Beef** we get chiefly from the United States, Australia, and Canada, **mutton** from New Zealand and the Argentine Republic, **pork** from the United States and Canada.

45. **Fish and Fisheries.** The fisheries round the coasts of Britain are exceedingly valuable, and British fishermen are among the most daring and successful in the world. The fisheries give employment to about 120,000 men, in over 25,000 registered boats, and the value of the fish annually landed on our shores amounts to about £9,000,000 sterling.

46. **Colonial Fisheries.** The fisheries of Canada also are exceedingly valuable. They give employment to between 70,000 and 80,000 men, and the value of the fish caught yearly is, in round numbers, about £5,000,000 sterling. The value of the salmon tinned at the canneries of British Columbia alone has in recent years been about £750,000. The fisheries off the coast of Nova Scotia and round Newfoundland are among the most valuable in the world, and the population of Newfoundland, amounting to about 200,000, is composed almost entirely of hardy fisher-folk.

47. **Wool—I.** For the cool part of the temperate, and for the colder regions of the earth, woollen fabrics are more in demand than those of linen or cotton. For our wool-supply we depend chiefly on our own colonies, more particularly those in Australasia and South Africa, and on India. The Australian wool, thanks to the care and attention given to the breeding of the sheep, and to the climate, is the best in the market. Of the 750,000,000 lbs. imported into Britain six-sevenths are from our own colonies. London is the great wool-market of the world, though in the United States and elsewhere wool-staplers are beginning to buy direct instead of through London. Half of the

wool imported is re-exported to other countries; the rest, together with most of our home-grown wool, is used up in our woollen manufactures. Woollen manufactures are being introduced also into our Canadian, South African, and Australian colonies.

48. **Wool—II.** We import annually wool to the value of about £25,000,000 sterling, chiefly, as has been said, from our own colonies. They take from us in return, in one form or other, the cloth or goods which we have made from it. Great Britain and her colonies possess more wool-producing sheep than all the rest of the world put together. If we include the United States, four-fifths of the wool-production and of the woollen manufacturing of the world is in the hands of the English-speaking people.

Woollen manufacture was long Britain's staple manufacture, and Britain still exports every year about £20,000,000 worth of woollens and woollen goods.

49. **Cotton—I.** Cotton is by far the most important of the vegetable fibres used for making cloth. It will grow almost anywhere where there are long, dry summers. It is a native of the old world, and grows largely in India. An excellent long-staple cotton is grown in Cyprus and in Egypt, but at present the chief cotton-producing country in the world, and the great source of Britain's supply, is the United States. More than half the cotton used in the world is grown in the Southern States of the Union. The best quality is the long-stapled varieties known as sea-island cotton. Cotton is now grown in Queensland, as well as India, Egypt, and Cyprus.

50. **Cotton—II.** Nearly half the world's raw cotton is sent to Britain to be manufactured. From the United States Britain buys about £27,500,000 worth of raw cotton annually, and from Egypt about £6,000,000 worth. Besides making all the cotton for home use, we export annually between £60,000,000 and £70,000,000 worth of cotton goods and cotton yarn and thread. These cotton goods are sent to all parts of the world, our colonies and the United States being large buyers. Considering the importance to us of a supply of raw cotton, a greater effort should be made to have a sufficient supply produced in our own colonies, so that our work-people may not again have to suffer as they did during the civil war in the States in 1861–65.

OF THE UNIVERSITY OF CALIFORNIA

51. **Linen and Jute.** Linen manufacture has lost much of its former importance, but is still a flourishing industry at Barnsley in Yorkshire, in Fifeshire and Forfarshire, and in Ulster. Jute is largely manufactured at Dundee, and we export yearly jute goods to the value of £3,000,000.

52. **Hides and Leather, Boots and Shoes.** Leather is used for a great variety of purposes. All leather is produced from the hides of animals. Britain imports hides largely from India and Africa, and the Australian colonies; Canada, the United States, and India send great quantities of undressed leather. Britain, on the other hand, exports great quantities of finished leather, and of leather goods, such as boots and shoes and saddlery. **Leicester** and **Northampton** are the centre of the boot and shoe trade; **Leeds, London,** and **Bristol** are the greatest centres of leather trade in the United Kingdom.

53. **The Timber Trade.** Great Britain cannot nearly supply the timber she needs, so she imports largely from Norway, Sweden, and Russia, as well as from the United States and Canada. The forests of Canada are practically exhaustless, and consist of useful pines and valuable hardwoods, such as oak, beech, walnut, &c. Canada and the United States send us furniture, window-frames, &c. Some of our finer cabinet woods, like mahogany, come from British Honduras, Ceylon, and Australia. Other valuable woods for ship-building, street-paving, and other purposes, come from Australia, while Burmah and India supply Britain with teak.

54. **Shipping and Ship-building.** Britain more than any other nation has shown a capacity for ship-building, an ability to man them, and an adventurous spirit, which have put into her hands much of the earth's commerce and a considerable share of its surface. The ship-building industry of Britain is by far the greatest of the world. In ship-building the United States and Germany come next to Britain, but the United States is the more dangerous rival. In this competition Canada and Australia are sure, as their resources develop, to take part.

GREATER BRITAIN

55. **Trade Routes.** London is the great trading centre of the earth, largely on account of its situation. British trade routes radiate mostly from the Thames, but radiate in all directions. Our ships for India, Eastern Asia, and Australia go many of them by the Suez Canal; the old route by the Cape of Good Hope is less used than formerly. So also is the route by Cape Horn to Western America. Thousands of ships are crossing and recrossing the Atlantic, carrying goods to and from the ports of Canada, the United States, and the West Indies. The goods and passengers are carried by rail from the eastern ports of Canada and the States to the Pacific ports, or *vice versa*, and from or to these by steamers to Japan, China, and Australia and New Zealand.

56. **Naval Protection and Coaling-stations.** The British navy has not only to protect Britian's world-wide commerce, but to guard Britain's world-scattered dominions. To do this it is necessary that our war-ships should be able to obtain fresh supplies of coal when wanted, or to get food and other needed supplies, and if necessary repairs. Britain has coaling-stations, as places where these things can be done are called, scattered all over the world. Thus, on the Suez Canal route there are Gibraltar, Malta, Aden, Bombay, Colombo, Singapore; on the route by the Cape there are Gibraltar, Sierra Leone, St. Helena, Cape Town, Mauritius. There are several coaling-stations also in Australasia. In the Western Atlantic there are Halifax, Bermuda, St. Lucia, Jamaica, Tobago, and the Falkland Islands. On the east coast of Asia are Hong Kong and Wei-Hai-Wei, and on the west coast Vancouver.

57. **What We as a Nation Can Do.** The nation that has the diligence and skill to develop to the utmost its natural resources, and the enterprise to procure by trade from foreign countries all that it does not itself produce in sufficient quantities, is sure to become great and powerful. But if in addition her pioneers of trade are intelligent and adventurous observers, she is sure to benefit the world as well by adding to its and her own stock of useful commodities.

58. **Necessity and Importance of Machinery.** Workmen formerly feared machinery, thinking that it deprived them of their employment. They do so still, and to a certain extent with justice. The worker whose place is taken by machinery suffers; but the general effect of the use of machinery has been to increase wages and to lower the price of commodities. This is the result that might have been expected. The use of machinery, as a rule, increases the number, improves the quality, and lessens the cost of production, of useful articles, so that it brings them within the reach of vast numbers of people who would otherwise have had to go without them. It is therefore the business of a nation to see that its machinery and its business methods are up to date, otherwise it cannot possibly hold its own in the commercial struggle. The influence of necessity on inventiveness is seen in the innumerable labour-saving appliances produced in the United States, where hand labour is scarce, such, for example, as the reaping, ploughing, and sowing machines now so generally used even in the mother-country. The Anglo-Saxon race seems to be more inventive than any other race, and this is a faculty which the nations composing it should do their utmost to develop to the fullest.

59. **How to Maintain Our Industrial Position.** To maintain the position, as a manufacturing nation, which Great Britain has attained, it is necessary that encouragement should be given to working men to make improvements in machinery, by securing to them the benefit of their inventions at a reasonable cost. The character of the education given to children in British schools must be improved. Things must be studied as well as words, and observation and judgment cultivated as well as memory. Fidelity to fact in word and act must be impressed on them as a primary duty; and their imaginations fired with love of knowledge, and pride in the glorious past of their country, the mother of "free nations". Their motto must be "Forward nor falter".

60. **Where Might is Right.** The people of Britain are as a rule utterly misjudged by foreign nations. To them Britain appears a great conquering nation, whose earth-hunger nothing seems to appease. In reality, Britain alone among nations has ever acted chivalrously and unselfishly. Spain, Portugal, Ger-

many, Italy, and other countries have not had to pay Britain for help, as Italy had to pay France, by surrender of territory. Justice, order, freedom, the good of the governed, not selfish gain, have been the objects kept in view, and her success in managing for others has forced her on bit by bit till her dominions embrace a fourth of the world's land-surface. India, Ceylon, and Egypt are splendid illustrations of the beneficence of British rule, which ought even to make the most prejudiced German or Frenchman confess that, in the case of Britain at any rate, "Might is Right".

61. **Our Colonies and Ourselves.** The trade between Great Britain and her colonies is very large. Naturally, it is greater in proportion than the trade between Britain and the United States, or any other foreign country. Yet it must be remembered that Great Britain does not place her colonies in a more favourable position as far as trade with her is concerned than foreign countries; nor, till Canada latterly introduced the change, did any of the colonies treat Britain more favourably than they treated foreign countries in matters of trade. Yet the love that binds the colonies to the mother-country is very real and very strong, as recent events have clearly shown; and there never existed in the world a dominion so capable of supplying from its own resources every conceivable want of its citizens as the British Empire.

COMMERCIAL GEOGRAPHY

OF

THE BRITISH EMPIRE AND THE UNITED STATES

THE BRITISH ISLES

POSITION

The British Isles lie to the north-west of Europe, from which they are separated by the **English Channel**, **Straits of Dover**, and the **North Sea**. On the west, the **Atlantic Ocean** lies between the British Isles and North America. The west coast is thus turned towards the *New World*, as the east coast is turned towards the *Old*. The British Islands occupy almost the centre of the *Land Hemisphere*. They are therefore in the best possible position for carrying on a world-wide commerce.

AREA

The area of the British Islands is fully 120,000 square miles. Of this England and Wales form about one-half, and Ireland and Scotland each about one-fourth.

POPULATION

The population of the British Isles is over 40,000,000. England is much more densely peopled than any of the other divisions.

The population of Ireland and Scotland in proportion to their size is about four times less than that of England. As a rule, the people of the British Isles are law-abiding, industrious, energetic, and enterprising. Education in the United Kingdom is almost universal, and great improvements have recently been made in the educational system, more attention, in particular, being given to commercial education.

The people of Great Britain seem to have a special aptitude for mechanics, and have long led the world in mechanical invention. This power seems to be possessed also, in a large measure, by the people of the United States, who in this respect are no whit behind the people of Great Britain.

SURFACE

The surface of Great Britain is flat towards the south-east, hilly towards the south-west, and mountainous only in the north and west. Nowhere, however, do the mountains in England present any serious obstacle to communication between one part of the country and another.

In Ireland the high ground is scattered round the island, at no great distance from the coast, while almost the whole of the interior is occupied by a low-lying plain, in some parts consisting chiefly of bog-land. Fully three-sevenths of the soil of Great Britain, including more than three-fourths of the entire surface of England, three-fifths of the surface of Wales, and one-fourth of the surface of Scotland is under crops, or in grass. Of the surface of Ireland three-fourths is under crops or in grass; so that, in all, three-fifths of the entire surface of the United Kingdom is actually under cultivation. The cultivation in England and Scotland is careful and scientific. The average produce per acre under crops is higher than in any other country. English breeds of sheep and cattle and horses are celebrated, and are eagerly sought after for improving the breeds in other countries.

PLAINS

ENGLAND.—England has extensive fertile plains, including the **Plain of York**, the **Cheshire Plain**, the **Central Plain**, the **Fen Country**, and the **Eastern Plain**.

SCOTLAND.—Plain of the Forth and Clyde, between the Northern and Southern Highlands, a region of coal, iron, and manufactures.

IRELAND.—The whole **centre of Ireland** forms one vast plain, nowhere rising to a height of more than 200 feet above sea-level. A part of this plain is the great **Bog of Allen**.

RIVERS

English rivers are numerous, and many serve as highways of trade, having harbours for large vessels at their mouths, and allowing smaller vessels to sail farther up. Few of the Scottish rivers, except the Clyde, are navigable beyond their estuaries. The Clyde has been deepened so that from Greenock to Glasgow it is practically a great ship canal. Many of the Irish rivers are navigable, and the Shannon is navigable for three-fourths of its length.

The **chief rivers** of England and Scotland enter the sea on the east coast. The **Severn**, the **Mersey**, and the **Clyde** are the only important rivers flowing into the sea on the west side of Great Britain.

The *most important* British river is the **Thames**; length, 215 miles.

The *longest* English river, the **Severn**, enters the sea on the west; length, 220 miles.

The *longest of all* in the British Isles is the Irish river **Shannon**; length, 225 miles.

The **Tay** is the *largest* Scottish river, and is said to carry more water to the sea than any other in the British Islands; length. 130 miles.

LAKES

ENGLAND has some small but beautiful lakes in the north-west, in the Lake Country.

SCOTLAND has many lakes in the Highlands, the chief being Loch Lomond.

IRELAND has also many lakes, Lough Neagh (area 153 square miles, larger than the Isle of Wight) being the largest British Lake.

CLIMATE

The climate of the British Isles is, generally speaking, cool, mild, and moist. Great extremes of heat or cold are almost unknown. The west coast of the country is milder and moister than the east, owing to the warm and moist winds accompanying the Gulf Stream. Most rain falls in Cumberland, and in the West Highlands and in the south-west of Ireland. The driest parts are districts to the south of the Moray Firth, and parts of Lincoln and Cambridge.

The abundance of rain makes our fields look green almost all the year round; and Ireland, on account of its delightful greenery, is frequently spoken of as the Emerald Isle; but the name is almost as applicable to Great Britain.

The climate, while free from extremes, is bracing and healthy, and nowhere in the world are people more devoted to manly outdoor games and sports than the people of the British Isles.

NATURAL PRODUCTIONS

MINERALS

The total value of the minerals raised in the United Kingdom amounts annually to about £80,000,000 sterling. By far the most valuable and most important of British minerals is coal, the annual value of the coal raised being over £60,000,000. The English coal-fields lie in the west and north of the country, those of Scotland in the central Lowlands. The detached Irish coal-fields are of but slight importance. The great coal counties in Britain in order are *Durham*, *Yorkshire*, *Lancashire*, *Glamorgan*, *Lanarkshire*, *Staffordshire*, *Northumberland*. Of the 200,000,000 tons of coal raised, Britain exports annually about one-fourth.

The chief coal-fields are—

Northumberland and Durham. Chief centre—*Newcastle*.

York, Derby, and Nottingham—the seat of many large manufacturing towns: Leeds, Bradford, Sheffield, Nottingham, Derby, &c.

South Lancashire—the seat of the cotton manufactures. Chief coal town—*Wigan*.

North Wales—chiefly Denbighshire.

Gloucestershire. Chief town—*Bristol*.

Warwickshire—small coal-field.

South Wales—good coal for steam purposes. Chief towns—

Merthyr Tydvil.

Cardiff, great coal-shipping port.

Monmouthshire—small but rich coal-field.

North Staffordshire—the Potteries. Seat of earthenware manufacture.

South Staffordshire—the Black Country. Many towns engaged in smelting iron ore and in making iron goods.

Cumberland—on the west coast of Cumberland, extending partly under the sea.

Leicestershire. Chief mining town. *Ashby de la Zouch.*

Shropshire. Chief town—*Coalbrookdale.*

Lanarkshire. Chief centre—*Glasgow.*

Ayrshire—small coal-field.

Fifeshire—small coal-field.

Other minerals produced include—

Iron, which is found in or near all the coal-fields. Chiefly at Cleveland (north-east corner of Yorkshire), Cumberland, Furness (north-west portion of Lancashire), Staffordshire, Leicestershire, Lincoln, Northampton, Ayrshire.

Copper, which is found in Cornwall and Devon, Cheshire, Anglesea. The production of copper ore in Great Britain has declined greatly in recent years.

Tin—Cornwall and Devon (the richest tin mines in Europe).

Lead—Flint, Durham, Derby, Dumfries, Westmoreland, Shropshire, York, Cardigan, Denbigh, Montgomery, Lanarkshire.

Salt—Cheshire, Durham, Lancashire, Staffordshire, Worcestershire, Yorkshire.

Slate—North Wales, Cumberland, Cornwall, Argyll, Perth.

Limestone—Portland, Devon, Derby, S. Wales, and in most counties in England, Scotland, and Ireland.

Granite — Aberdeen, Kirkcudbright, Cornwall and Devon, Cumberland, Leicestershire.

China-clay—Cornwall, Devon, Dorset.

Marble—Kilkenny, Donegal, Sutherland, Perth, Derbyshire, Devon.

Sandstone—York, Lancashire, Lanark, Dumfries, Derby, Forfarshire, Ayrshire.

Zinc—Cumberland, Wales, Isle of Man.

Oil Shale—Edinburgh and Linlithgow.

VEGETABLE

Wheat—largely in the southern and eastern counties of England, and eastern counties of Scotland.

Oats—largely in the north, especially in the north-western counties of England, in Scotland, and in Ireland.

Barley—in the east and middle of England and in the eastern counties of Scotland.

Beans and Peas—largely in Suffolk, Essex, Lincoln, Kent, Cambridge, York.

Potatoes—largely throughout Ireland, and in Lincoln, York, Lancashire, Cheshire, Fife, Forfar, Perth.

Turnips—generally over the country.

Hops—in Kent and Surrey, Worcester and Hereford.

Apples and Pears—largely in Hereford, Worcester, Devon, Lanarkshire, and Forfarshire.

Garden Vegetables and Fruits—near London and the large towns.

Flax—is grown largely in the North of Ireland.

FORESTS

Less than 5 per cent of Great Britain returned as under woods or plantation.

The chief woodland stretches are—

New Forest—Hampshire.
Dean Forest—N. of mouth of Severn.
Windsor Forest—near Windsor.
Sherwood Forest—Nottingham.
Epping Forest—in Essex.

LIVE STOCK

The following counties are famous for:

Horses — Yorkshire, Lincoln, Norfolk, Lancashire, Suffolk, Lanarkshire, Devon, Aberdeen, and Perth in Great Britain, and Cork, Antrim, Down, Galway, Wexford, and Tipperary in Ireland.

Asses — Mayo, Galway, Cork, Kerry, Limerick, and Tipperary.

Cattle — largely in York, Lancashire, Cheshire, and the west and south of England, in Ayrshire, Forfarshire, and Aberdeenshire, and the counties in the south-west of Scotland, and throughout Ireland generally.

Sheep — largely in Northumberland, Yorkshire, Lincoln, Sussex, Hampshire, Dorset; in Berwick, Roxburgh, Dumfries, Kirkcudbright, Ayr, Argyll, Perth, and Inverness.

Pigs—largely in the south-west of England, in Yorkshire, Lincoln, and Cambridge, and more generally throughout the whole of Ireland, especially in the county of Cork.

Goats — considerable numbers of goats are reared in Ireland.

DAIRY PRODUCE

The counties most noted for their butter and cheese are **Cheshire, Oxford, Somerset, Dorset, Leicester, Ayrshire, Wigtown, and Kirkcudbright,** and the counties in the centre and south of Ireland, particularly Waterford, Cork, and Kerry.

FISHERIES

River and Lake — Salmon is found in the rivers *Spey, Dee, Tay, Forth,* and *Tweed*, and other rivers and lakes in Britain, and in the *Shannon, Moy, Erne*, and *Bann*, and other rivers and lakes in Ireland.

Sea Fisheries—The sea fisheries, especially those of the **North Sea**, are exceedingly valuable. They include haddock, plaice, soles, turbot, cod, and mackerel, besides herrings. The herring fishery is the most valuable Scottish fishery; but for Great Britain the haddocks caught are more valuable than the herrings. The total value of the fish annually caught in the United Kingdom is about £9,000,000. The chief **fishing centres** are, in Scotland, *Aberdeen, Fraserburgh*, and *Stornoway*; and in England, *Whitby, Scarborough, Grimsby, Hull, Yarmouth*, and *Lowestoft*; in Ireland, *Queenstown, Kinsale*, and *Skibbereen*.

MANUFACTURES

METALS AND METAL GOODS

Iron is smelted in the Cleveland district of Yorkshire, in the Durham, S. Staffordshire, N. Lancashire, Cumberland, S. Wales, and Monmouthshire coal-fields, and in the Ayrshire and Lanarkshire coal-fields. The chief seats of the iron manufacture are Middlesboro', Barrow-in-Furness, Merthyr Tydvil, Glasgow, and Coatbridge.

Copper — is smelted at Swansea, St. Helens, Widnes, and elsewhere.

Tin is smelted in Cornwall, near Truro, and at Redruth.

Lead is smelted at Swansea, St. Helens, Truro, Leadhills, and elsewhere.

Zinc is smelted chiefly at Swansea and Warrington.

Steel-making is carried on chiefly at Sheffield, Middlesboro', Newcastle, Darlington, Barrow-in-Furness, Merthyr Tydvil, Swansea, and at Glasgow, Airdrie, and Coatbridge.

Cutlery and Hardware are made chiefly at Sheffield, Birmingham, and the large towns in the neighbourhood in the counties of Worcester, Warwick, and Stafford, and Falkirk.

Machinery is made chiefly at London, Glasgow, Birmingham, Manchester, Oldham, Leeds, Dundee.

Agricultural Implements—at Ipswich, Lincoln, Bedford.

Armour Plates, Steel Rails, &c.—Sheffield, Middlesboro', Glasgow.

Small-arms—Birmingham, Enfield.

Cannon—at Woolwich, Newcastle, Barrow.

Railway Engines—London, Glasgow, Manchester, Crewe, Darlington, Newcastle, Doncaster, Derby, and Swindon.

Locks—Wolverhampton.

Nails—Dudley.

Needles and Fish-hooks—Redditch.

Brass Goods—Birmingham, Sheffield, London.

Tinware—South Wales.

Electro-plated Goods—Sheffield, Birmingham, and London.

Bicycles—Birmingham, Coventry, Newcastle, Glasgow.

Watches—London, Coventry, Prescot.

Jewellery—London, Birmingham, Sheffield, and Edinburgh.

Ship-building—Glasgow, Dumbarton, Belfast, Newcastle, Sunderland, London, Barrow-in-Furness, and at the *Royal Dockyards* of Devonport, Portsmouth, Chatham, &c.

POTTERY, CHEMICALS, &C.

Earthenware and China—Stoke, Burslem, Hanley, Leeds, Glasgow, Greenock, Worcester, Derby, Lambeth.

Glass—Newcastle, St. Helens, Birmingham, London.

Salt—Droitwich, Northwich, Middlewich, and Winsford.

Soda—Newcastle, Liverpool, Bristol, St. Helens.

Chemicals—Glasgow, Swansea, Newcastle, Widnes, Jarrow, St. Helens.

Oils—Bathgate, Broxburn, Hull, Liverpool, London, Widnes.

TEXTILES AND CLOTHING-MATERIALS

Cotton Goods—Manchester, Blackburn, Oldham, Bolton, Bury, Stalybridge, Preston, and other towns in Lancashire and N.E. Cheshire, Glasgow, Paisley, Aberdeen, and Belfast.

Manchester is the great distributing centre and world-market for the cotton trade.

Thread—Paisley, Leicester.

Hosiery—Nottingham, Leicester, Balbriggan.

Woollen Goods—Leeds, Bradford, Huddersfield, Halifax in the West Riding, manufacture all kinds of *woollens and worsteds*: Galashiels, Hawick, and Selkirk in the Tweed Valley, *woollen hosiery and tweeds*; Stroud in Gloucestershire, and Trowbridge in Wiltshire (*for broad-cloths*); Rochdale in Lancashire; and Welshpool in Wales (*for flannels*). Aberdeen and Stirling in Scotland; and Dublin, Cork, and Kilkenny in Ireland.

Clothing—Leeds, London, &c.

Carpets—Kidderminster, Kilmarnock, Wilton, Halifax, Leeds, Dewsbury.

Linen—Belfast, Dundee, Dunfermline, Barnsley, Leeds, Arbroath, Forfar.

Silk—London, Macclesfield, Congleton, Bradford, Leek, Derby, Paisley, Glasgow, Dublin.

Lace—Nottingham, Derby, Leicester, Glasgow, Belfast. *Hand-made*: Honiton, Limerick.

Tanning—London, Leeds, Bristol, Aberdeen, Newcastle, Glasgow.

Boots and Shoes—Leicester, Northampton, Stafford, Glasgow.

Saddlery—Walsall, London, Birmingham.

Straw-plait—Dunstable, Luton.

Gloves—Worcester, Woodstock, Yeovil, Dundee.

ARTICLES FOR FOOD

Sugar—refined at London, Liverpool, Bristol, Greenock, Leith.

Brewing—Burton-on-Trent and London, Edinburgh, Glasgow.

Biscuits—Reading, London, Glasgow, Dundee.

Jams—London, Dundee.

Fish-curing—Yarmouth, St. Ives, Aberdeen.

Milk Preserving—Aylesbury.

MEANS OF COMMUNICATION

In Great Britain, besides the abundance of excellent and **well-kept roads**, there are splendid means of communication by **railway, river, and canal**, and in the cases of seaports and commercial towns on the coast constant **steam communication**. The chief lines of railway are—

IN ENGLAND

Great Central Railway—*London to Manchester*; **chief stations** — Leicester, Nottingham, Sheffield, Penistone.

London and North-Western Railway—*London to Carlisle*; **chief stations**—Rugby, Stafford, Crewe, Wigan, Preston, Lancaster.

Midland Railway—*London to Derby and Carlisle*; **chief stations** — Bedford, Leicester, Nottingham, Sheffield, and Leeds.

Great Northern Railway—*London to York*, through Huntingdon, Peterborough, Grantham, Doncaster. The **North-Eastern Railway** carries on the trains to Newcastle and Berwick.

Great Eastern Railway — *London to Cambridge and Lynn*; Norwich, Yarmouth, Ipswich, and other towns in the eastern counties.

Great Western Railway—*London to Bristol*, through Reading and Swindon, then on to Exeter, Plymouth, and Penzance, and to Cardiff and Milford (*via* Severn Tunnel).

South-Eastern and Chatham Railway —*London to Dover and Folkestone*, by Maidstone, and *London to Dover*, through Chatham.

London and South-Western Railway—one branch goes to Portsmouth; another to Salisbury and Exeter.

London, Brighton, and South Coast Railway—its name describes the route.

The London and North-Western connects with the Caledonian at Carlisle, and the Midland Railway connects at Carlisle with the North British and the Glasgow and South-Western. The North-Eastern connects the Great Central and the Great Northern with the Scotch system at Berwick.

IN SCOTLAND

North British Railway—Four sections:

1. Edinburgh to Berwick.
2. Edinburgh to Carlisle.
3. Edinburgh to Glasgow.
4. Edinburgh to Dundee.

Caledonian Railway—Four sections:

1. Glasgow to Edinburgh.
2. Glasgow to Carlisle and Galloway.
3. Glasgow to Perth and the North.
4. Glasgow to Oban.

Highland Railway—Perth to Inverness and Wick, and Dingwall to Strome.

Glasgow and South-Western Railway —Glasgow through Ayrshire to Dumfries and the South.

Great North of Scotland Railway—Aberdeen to Elgin, and to Ballater.

IN IRELAND

1. **The Great Southern and Western**—Dublin to Cork, Limerick, and Killarney and Tralee.
2. **The Midland Great Western**—from Dublin to Galway, Westport and Ballina, and Sligo.
3. **The Great Northern**—from Dublin to Belfast, Londonderry, and many towns in the north.
4. **The Belfast and Northern Counties** —from Belfast to Londonderry, Coleraine, Giant's Causeway, &c.
5. **The Dublin, Wicklow, and Wexford.**
6. **The Waterford and Limerick.**

The United Kingdom is well supplied with Railways. In Great Britain and Ireland the miles of railway open amount to over 22,000, that is one mile of railway for every 5½ miles of surface.

CANALS

Nearly all the important rivers of England are joined by canals, and but that many of the canals are in the hands of railway companies, more advantage would be taken in England of the excellent system of water-ways they provide.

The chief English canals are—

The Grand Trunk Canal, from the Mersey to the Trent and Thames.

The Bridgewater Canal, the oldest in England. It extends from Worsley to Manchester, and has branches to Runcorn.

The Leeds and Liverpool Canal—connecting the York Ouse with the Mersey.

The Gloucester Ship Canal—14 miles long, by which large vessels are able to reach Gloucester.

The Manchester Ship Canal was begun in 1887, and was opened on 1st January, 1894. It cost 15½ million sterling, but has turned Manchester into an important and thriving seaport.

The chief Scottish canals are—

The Caledonian Canal—through Glenmore from Loch Linnhe to the Moray Firth; through Lochs Lochy, Oich, and Ness.

The Forth and Clyde Canal joins the Firths of Forth and Clyde.

The Union Canal and the **Monkland Canal** are branches of the Forth and Clyde Canal.

The Crinan Canal crosses the northern end of the peninsula of Cantyre.

The Scottish canals are of limited extent and slight importance compared with those of England or Ireland. This is due to the character of the surface, which, save in the part of the lowland plain between the Forth and Clyde, is badly suited for canals.

The chief Irish canals are—

The Grand Canal—from Dublin to Banagher, on the Shannon.

Royal Canal—from Dublin to the Shannon above Lough Ree.

Newry Canal—unites river Newry with the Bann, and thus with Lough Neagh.

Lagan Canal—from Belfast to Lough Neagh.

Ulster Canal—from the Blackwater, a feeder of the Upper Bann, to Lough Erne.

Boyne Canal—from Drogheda to Navan.

COMMERCIAL COMMODITIES

Imports

The United Kingdom imports **raw materials**, including cotton, wool, silk, flax, hemp, jute; timber, oil, tallow, hides; copper, gold, silver; dyes, india-rubber, iron-ore, copper-ore, and lead, tin, and other metals.

Articles of Food and Drink, including corn, sugar, tea, coffee, cocoa, rice, spices, wines, butter and cheese, cattle and meat, eggs, fruit, and vegetables.

Manufactured Goods—silks and fancy goods, paper, watches, toys.

Exports

Coal and Clay and Manufactured Goods of all kinds, including cotton, linen, woollen, jute, and silk goods, iron and steel goods, cutlery and hardware, implements and tools. Apparel and haberdashery, millinery, boots and shoes, chemicals.

The chief articles of export from **Great Britain to the Colonies** are cotton goods, woollen goods, metals, machinery, and manufactured articles of all kinds.

In return for these **Great Britain obtains from the Colonies**, amongst other articles—

From **India**—tea, cotton, wheat, linseed, jute, hides, rice, indigo, leather, timber, wool, coffee.

From **Ceylon**—tea, plumbago, cinnamon, cocoa-nuts.

From the **Straits Settlements**—tin, pepper, cutch and gambier (materials used in dyeing), gutta-percha, &c.

From **Hong Kong**—tea, silk, &c.

From **South Africa**—gold, diamonds, wool, feathers, copper-ore, hides, sheep-skins, &c.

From **West African Settlements**—palm-oil, nuts, ivory, india-rubber, &c.

From **Australia and New Zealand**—wool, gold, silver, copper, tin, grain, fruits, Kauri gum, timber, preserved meats, leather, hides, &c.

From British North America—timber, animals, grain, cheese, fish, gold and silver.

From British West Indies and Guiana—sugar, rum, cacao, fruit, spices, logwood, mahogany.

Egypt sends to Britain cotton and cotton-seed, beans, wheat, sugar; and receives in return cotton, coals, metals, and machinery.

The United States *send* to Britain raw cotton, wheat and flour, maize, bacon and hams, cattle, beef, lard, leather, oil-cake, petroleum, tobacco, timber, &c.; and *receive in return* woollen, linen, cotton, jute, and silk goods, wool, iron, machinery and hardware, chemicals, earthenware, books, &c.

The Philippines *send* to Britain Manilla hemp, sugar, and cigars; and *receive* cottons and linens, machinery, and metal goods.

Cuba and Porto Rico send to the United Kingdom unrefined sugar and furniture woods, and take in return cotton manufactures, linen, and iron.

Argentine Republic sends wheat, maize, mutton, tallow, hides and skins, wool, linseed, in return for iron, machinery, and railway materials, cottons, woollens, jute goods, earthenware, paper, &c.

TRADING PORTS

London (on the Thames) trades with all parts of the world. It imports food-stuffs from the Continent, tea from India, and wool from Australia and Africa. It exports cotton and woollen manufactures, apparel, metals, machinery, cutlery, hardware, arms, beer, books, and stationery.

Liverpool (on the Mersey), like London, trades with all parts of the world. It trades especially with the United States, Canada, the West Indies, and South America. It imports raw cotton, and exports cotton manufactured goods. In addition it imports immense quantities of grain and meat and fruit, and exports largely chemicals, earthenware, glass, machinery, and metal goods. The export trade of Liverpool is greater than that of London.

Hull (on the Humber) imports cotton from America, and fruit, corn, and dairy produce from the Continent, and exports woollens, cottons, machinery, and metals.

Glasgow trades with all parts of the world. It imports grain, cattle, food-stuffs, fruit, iron ore, timber; and exports coal, cotton, linen, jute, iron and steel, chemicals, ships and machinery. These, in the order named, are the four chief trading ports in the United Kingdom, but there are many other seaports of very great importance, such as

Southampton (on the Itchen)—a station for steamers carrying foreign mails.

On the East Coast—Dundee, Leith, Newcastle, Hartlepool, Goole, Grimsby, Harwich, Dover, Folkestone.

On the South Coast—Newhaven, Southampton, and Plymouth.

On the West Coast—Bristol, Cardiff, Swansea, Manchester.

Newcastle and Cardiff are the great coal ports.

Manchester, which has been turned into a port, does a large trade in importing raw cotton, and exporting cottons and machinery.

Dundee deals chiefly in jute.

Southampton does a large import and export trade, and is the chief port of call for mail steamers.

Commercial Centres — London and Liverpool, Glasgow and Bristol, are not merely seaports. They are great general commercial centres, distributing their imports to the surrounding country, and collecting its manufactures for export. This is true also to a more limited extent of the great centres of manufacturing, Manchester, Birmingham, Leeds, Sheffield. These act as centres for distribution of food-stuffs, &c., to the districts round, and from these they collect the manufactures.

BRITISH COLONIES AND DEPENDENCIES

INDIA

India is a peninsula projecting from the south of Asia midway between the Arabian peninsula on the one side and the Indo-Chinese peninsula on the other. It resembles Italy in having an island, namely Ceylon, at its southern extremity. In size it is fifteen times as large as the British Islands.

Population

Next to China, India is the most populous country in the world. Its inhabitants (including those of Burmah) number over 300,000,000, while those of China are usually said to amount to nearly 400,000,000. India thus contains more than two-thirds of the whole population of the British Empire. The population is most dense in the parts immediately under the control of the United Kingdom, more especially in Bengal. The Native or Protected States are much less densely peopled.

Dimensions

Its **length** is 1900 miles. Its **breadth** about the same. **Coast-line** 4000 miles. **Area** is 1,700,000 square miles.

Surface

India consists of a vast continental plain—watered by the great rivers, the **Indus, Ganges,** and **Brahmapootra,** and their tributaries—and a peninsular plateau, the *Deccan*, the edges of which are formed by the **Ghauts** on the east and west, the **Vindhya Mountains** on the north, and the **Nilgiri Mountains** on the south. A range of hills running in a north-eastern direction across the continental plain divides it into two and separates the basin of the Bay of Bengal from that of the Arabian Sea. The slope of the Deccan, like that of England itself, is generally toward the south-east. On the north are the **Himalaya Mountains,** between India and Tibet. They form a range 1500 miles long, with an average width of 150 miles, and contain the highest peaks in the world.

Suliman Mountains } forming the N.W.
Hala Mountains } frontier.

Chief Passes { **Kyber.**
{ **Bolan.**

The mountains on the north and northwest of India effectually separate it from the rest of the Asiatic continent, and prevent the commerce of India expanding much in these directions.

Among the plains of India are—

The Terai, at foot of Himalaya Mountains.
Malabar Coast Plain, between W. Ghauts and Arabian Sea.
Carnatic or Coromandel Coast Plain, between E. Ghauts and Bay of Bengal.
Table-land of Malwa, between Vindhya Mountains and the Aravulli Mountains.

The valley of the Ganges and the valley of the Indus are extensive plains, very little above sea-level, and exceedingly fertile.

The chief rivers are—

The **Irrawaddy, Brahmapootra, Ganges, Mahanuddy, Godavery, Krishna,** and **Cauvery,** flowing into the Bay of Bengal.
The **Taptee, Nerbudda,** and **Indus,** flowing into the Arabian Sea.

The **Ganges,** the most important river of India, rises in Himalayas, and is navigable from Hurdwar. It is the sacred river of the Hindoos. Delta formed at its mouth is called the Sunderbunds. Its chief tributary is the *Jumna*, which itself receives on the right bank the Chumbul. The Ganges and its tributaries are much used both for navigation and for irrigation.

The **Indus** rises in Himalayas, and has a length of 1800 miles. Its tributaries the *Ihelum*, *Chenab*, *Ravee*, *Bias*, *Sutlej*, give the name of **Punjaub** (that is, "five rivers") to the district through which they flow. In the Punjaub, as in Bengal, there are numerous canals and important irrigation works.

CLIMATE

Owing to its great size and various altitudes, India has many climates, more or less tropical. Plains, in summer, sultry and unhealthy; Deccan and slopes of Himalayas more temperate. Mountain regions alone, in the hot season, are suitable for Europeans. **Rainy season, from June to October**; S.W. monsoon. **Cool season, from October to March.** During this time the N.E. monsoon prevails, and it is the rainy season on the south-eastern or Coromandel coast, and in Ceylon. **Hot season, from March to June.** All India south of the Vindhya Mountains lies within the tropics; but the heat, except on the low-lying coast-plain, is less extreme than might be expected. This is due to the height of the plateau. The **uncertainty of the rain-supply** is one of the greatest drawbacks to the climate of India, and frequently, as has been lately seen, entails great suffering on the people.

The **Roads** are numerous and well kept. The most important are found between the larger towns, as from Bombay to Delhi and Calcutta. **Railways and canals** greatly facilitate traffic. Oxen and buffaloes are commonly yoked in carts. Camels are used in the Indus and Punjaub districts.

Canals are constructed not only to facilitate traffic, but also for irrigation purposes, and thousands of square miles of country, that would be mere desert without such works, are among the most productive parts of India.

RAILWAYS

The first Indian railway was begun in 1853; now there are over 22,000 miles of railway in use, and 2000 under construction.

The chief lines are—

From Calcutta to Allahabad and Bombay.

From Allahabad to Lahore and Peshawar—This is chiefly for military purposes.

From Lahore to Mooltan and Karrachi.

From Bombay to Madras.

From Madras to Calicut.

PRODUCTIONS

The **mineral wealth** of India is enormous but undeveloped. The people are chiefly engaged in **agriculture.** Eighty per cent of population directly or indirectly connected with land. **Manufactures** of shawls and textile fabrics carried on, though the industries are not so flourishing as formerly.

Chief Crops—Rice, wheat, cotton, jute, opium, tea, sugar-cane, coffee, indigo, pepper, oil-seeds, tobacco, dyes, drugs, spices.

MANUFACTURES

Shawls at Lahore, Amritsar, and in Cashmere.

Cotton at Calcutta, Allahabad, and Bombay; **Opium** at Patna.

Muslin at Dacca; **Cotton and Silk** at Benares.

Jute at Calcutta and Bombay.

Ivory goods and other ornaments at Madras and Surat.

FOREIGN TRADE

The foreign trade, especially that with Britain, is of very great importance. The **Suez Canal** is a great highway of Indian trade. The trade is chiefly in the hands of the British.

Imports—Cotton, woollen, and metal manufactured goods, machinery, materials for railways, tin, copper, glass, fancy articles of all kinds, apparel, chemicals and drugs, spices, oil, and coal.

Exports—Raw cotton, jute, sugar, coffee, tea, rice, wheat, opium, wood, sago, indigo, hides and skins, ivory, silk, carpets, and shawls.

India *exports to* **United Kingdom**—tea, jute, jute goods, wool, hides, seeds, wheat, timber; *imports from* **United**

Kingdom—cotton yarn and cotton goods, cutlery and hardware, machinery, metal goods, and railway plant.

To **Hong Kong**—opium, cotton yarn, jute; *from* **Hong Kong**—drugs, silk, sugar.

To **Straits Settlements**—opium, rice, jute goods; *from* **Straits Settlements**—tin, fish, spices, sugar.

To **Mauritius**—grain, pulse, rice; *from* **Mauritius**—sugar.

To **Ceylon**—grain and pulse; *from* **Ceylon**—cocoa-nut oil and spices.

To **Zanzibar**—grain, pulse, cotton manufactures; *from* **Zanzibar**—ivory, spices.

To **Egypt**—rice, indigo, and jute.

To **Australia**—jute, gunny-bags, tea; *from* **Australia**—horses, copper.

Trading Ports

Bombay, the leading commercial town. Chief articles of export: Cotton, opium, wheat, seeds. Imports, cotton goods, apparel, iron goods, machinery.

Calcutta, the capital of India, exports opium, rice, tea; and imports vast quantities of cotton goods.

Madras does an extensive commerce in teak, indigo, cereals, and sugar.

Karachi, at the mouth of the Indus, trades with countries on Persian and Arabian Gulfs, and with the East Coast of Africa. It exports to the United Kingdom cotton, wool, hides, tea, seeds, wheat; and imports apparel, curtain and woollen goods, machinery, and railway materials.

Rangoon, in British Burmah, carries on trade with Europe, China, and Australia, and exports rice, teak, sugar, and cotton.

CEYLON

Ceylon lies to the south of India, from which it is separated by the Gulf of Manaar and Palk Strait.

Area—25,300 square miles.

Population—3,500,000.

The **surface** is mountainous, particularly in the centre. The soil is fertile.

Climate—tropical, but tempered by sea-breezes, and there is never, as in India, a deficiency of rain.

Productions—Plumbago, cattle, rice, tea, pearls, cocoa-nuts, and cocoa-nut oil.

Imports—Cotton goods, salt fish, rice, and other grain, coal and coke, spirits and wines.

Exports—Tea, cocoa-nut products, areca nuts, plumbago, coffee.

Ports—*Colombo* on the west coast, and *Galle* in the south. *Trincomalee* on the east coast is a naval station.

STRAITS SETTLEMENTS

Area—37,000 square miles. This includes the native states of *Perak, Selangor, Sungei Ujong, Negri Sembilan*, and *Pahang*, under British protection, as well as *Singapore, Penang*, and *Malacca*.

Productions—The soil is fertile. Coffee is cultivated, and there are valuable forests.

Chief Exports are tin, sugar, spices, dye-stuffs.

Imports—Cotton goods and metals from *England*, rice from *India*, tea from *India* and *Ceylon*.

Ports—*Singapore*, with a population of 200,000, great commercial centre, *Penang* and *Malacca*.

LABUAN

An island off north-east of Borneo. **Area**, 30 square miles. Produces coal.

NORTH BORNEO AND SARAWAK

Area of both about 85,000 square miles. Population, 750,000. The chief productions are timber, sago, rice, pepper, gums, copper, tobacco. The country is exceedingly rich in minerals, including coal, gold, silver, antimony, and quicksilver.

Imports—Oil, salt, wine, spirits, opium, textile manufactures, and machinery, &c.

Exports—Cocoa-nuts, gutta-percha, tobacco, india-rubber, sago, gambier, &c.

Port—Sandakan, the capital.

HONG KONG

Hong Kong, off south coast of China. **Area**, about 400 square miles. **Population**, nearly 400,000. An emporium for British goods.

Imports—Cottons and other manufactured goods, &c.

Exports—Tea, silk, &c. Trades chiefly with the United Kingdom, Australia, and the United States. Capital, Victoria.

WEI-HAI-WEI

Wei-Hai-Wei is an important naval station south of entrance to Gulf of Pechili.

ADEN

Aden is an important point. With island of Perim it commands the entrance to the Red Sea. Coffee market and coaling station.

Imports—Grain, cottons, and other manufactured goods, and tobacco.

Exports—Coffee, gums, hides, and skins.

CYPRUS

Cyprus was ceded to England by Turkey in 1878. It produces wine, cotton, raisins.

Imports—Cotton and woollen manufactures, leather, sugar, soap, rice, groceries, tobacco, and petroleum.

Exports—Wheat, cotton, raisins, silk, hides, fruit, and vegetables.

Ports—*Larnaca*, *Limasol*.

BAHREIN ISLANDS, in the Persian Gulf.

Imports—Rice, cotton, dates, coffee.

Exports—Pearls.

Trades with India and United Kingdom.

Port—Manameh.

BRITISH SOUTH AFRICA

British South Africa, the country between **Cape Agulhas** and the **Zambesi**, under British protection and control, has an area of over 1,000,000 square miles, and a population of little more than 5,000,000. It includes besides **Cape Colony, Natal, the Orange River Colony, the Transvaal, and Southern Rhodesia**, the native protectorates of **Bechuanaland and Basutoland.**

SURFACE

The surface is varied, in some parts exceedingly so; but everywhere it has a character peculiar to itself. The low-lying coast-lands are fertile and well-cultivated. Beyond these the land rises in a succession of terraces towards the interior. Each of these terraces is separated from the terrace beyond by a range of hills running parallel to the coast. The first of these terraces in Cape Colony is known as the *Little Karoo*, and the second as the *Great Karoo*, from a Zulu word meaning "dry". Beyond this is a **great plateau**, which is continued through the Orange River Colony and the Transvaal, and Southern Rhodesia. It is crossed here and there by ranges of hills, and its surface is broken often by detached hills, many of them of volcanic origin.

The high upland plains of which the greater part of South Africa consists have five distinct drainage areas. The coast region and the two lower terraces drain towards the ocean on the south and east. The southern part of the central plateau is drained by the Orange River and its affluents. The Limpopo drains a considerable part of the Northern and Eastern Transvaal and of Southern Rhodesia.

Much of Northern Bechuanaland is drained into Lake Ngami, and the northern part of Bechuanaland and of Southern Rhodesia is drained by the Zambesi and its tributaries.

CLIMATE

The climate is varied. The coast region on the east is hot, but the heat is more moderate on the south coast. On the table-land there are greater extremes; but on the whole the climate is temperate, dry, and healthy. It is almost everywhere suitable for Europeans. Like Australia the inland plateau suffers from a deficiency of water. Much of the soil is fertile, and is capable of producing almost every variety of useful plant, including European fruits of all kinds.

PRODUCTIONS

Mineral riches enormous, including vast fields of **coal**, exceedingly valuable deposits of **gold** and **copper**, and the richest **diamond fields** yet discovered. **Wheat** and **oats** are grown on the uplands, and much of the soil of the Transvaal and Orange River Colony and Southern Rhodesia is suitable for cereals. **Maize** is at present the chief grain. **Cattle-breeding**, **sheep-rearing**, and **ostrich-farming** are the chief forms of agriculture at present followed.

Imports—Agricultural and other machinery, railway plant, metals, cutlery and hardware, timber, cabinet-work and upholstery, clothes, boots and shoes, millinery, cotton, woollen, and linen, sugar (Mauritius), oilmen's stores, &c.

Exports—Gold, precious stones, wool, hair, hides, ostrich feathers, copper ore, coal.

Ports—*Cape Town*, *Port Elizabeth*, and *Durban* are the chief ports.

The imports and exports amount each to nearly £25,000,000. Most of the trade is with Great Britain and her colonies, and the United States.

BRITISH CENTRAL AFRICA

Area about 300,000 square miles. This includes part administered by British South Africa Company. **Population** about 3,000,000.

Gold and coal have been found. Wheat and European fruits are grown.

Imports—Cotton goods, machinery, provisions, hardware, and agricultural implements.

Exports—Ivory, coffee, and india-rubber.

ZANZIBAR AND PEMBA

Zanzibar and Pemba are two small islands off the east coast, with an **area** of about 1000 square miles and **population** of 200,000. They export cloves and ivory, and import groceries and manufactured goods, spirits, arms, and mineral oils.

BRITISH EAST AFRICA

Area over 1,000,000 square miles.

Climate—Intensely hot.

Exports—Ivory, india-rubber, cattle, hides, and copra.

Imports—Cotton goods, jute goods, clothes, provisions, &c.

Seaport—*Mombasa.*

SOMALILAND AND SOKOTRA

Area about 70,000 square miles.

Imports—Rice, cottons (America), and dates.

Exports—Skins, hides, feathers, gum.

Chief Port—*Berbera.*

EGYPT

Area—400,000 square miles, cultivated and settled part 13,000; **population**, 10,000,000.

Surface. The valley of the Nile, with an average width of eight to ten miles, is rich and fertile. On either side the country consists of deserts, with here and there fertile spots called *oases.*

Climate—Dry and healthy.

Means of Communication—Nile, Suez Canal, railways about 2000 miles.

Imports—Cotton goods and other clothing materials, coal, timber, coffee, wine, metal goods, and machinery.

Exports—Cotton, cotton seeds, sugar, beans and lentils, tobacco.

Chief Ports—*Alexandria*, *Port Said*, *Suez.*

EGYPTIAN SUDAN

The Nile basin-country which lies south of the Wady Halfa, except Abyssinia.

Area—About 1,000,000 square miles.

Climate—Northern part dry, southern damp.

Imports—Cottons and hardware, &c.

Exports—Gold dust, ostrich feathers, gums, hides, &c.

The most important towns are *Khartoum*, *Suakim*, *Berber.*

WEST COAST SETTLEMENTS

These consist of the **Gold Coast**, **Sierra Leone**, **Gambia**, and **Lagos**. The climate is very unhealthy for Europeans.

Interior probably more healthy. Country and its resources very imperfectly known and altogether undeveloped.

Area—About 100,000 square miles. **Population** about 5,000,000.

Exports—Palm-oil, nuts, ivory, india-rubber, oil-seeds, ginger, hides.

Imports—Cotton goods, weapons, gunpowder, beads.

Chief Ports—Sierra Leone, Accra, Lagos.

NORTHERN AND SOUTHERN NIGERIA

Nigeria is the name of the district in the basin of the Lower Niger now under British control. It has an area of about 400,000 square miles, and a population of between 20,000,000 and 40,000,000. It is divided into Northern Nigeria and Southern Nigeria.

Climate—Hot, Niger Delta unhealthy, inland parts healthy.

Exports — India-rubber, gum, hides, ivory, palm-oil, indigo.

Imports—Cottons, silks, woollens, hardware, tobacco, salt.

Chief Port—*Akassa.*

MAURITIUS

Mauritius lies to the east of Madagascar. The island is mountainous, very fertile, and has a very healthy climate. **Area**, 703 sq. miles. **Population**, nearly 400,000, mostly Indians.

Exports—Sugar to India, the Cape, and Australia, vanilla, rum.

Imports—Grain, cotton goods, apparel and haberdashery, machinery, &c.

Chief Port—*Port Louis*, the capital.

THE SEYCHELLES

These consist of about thirty fertile islets under the government of Mauritius. The largest island, Mahé, is overgrown with date and palm-trees.

ST. HELENA AND ASCENSION

Two small islands in the Atlantic, form valuable stations on the Cape route to Australia and the East.

AUSTRALIA

Boundaries—North, east, south—Pacific Ocean; west—Indian Ocean.

Situation, Size, &c.—Length, E. to W., about 2400 miles; breadth, N. to S., about 2000 miles; area, 2,900,000 square miles.

Population—Population about 4,000,000, most of whom are of European descent.

CLIMATE

The northern portion of the continent lies within the tropics and is very hot. The south is more temperate. Australia receives as much rain as Europe, but it is very unevenly distributed. In some parts long **periods of drought** occur, to be followed by **times of flood**. Along the east coast the annual rainfall is as heavy as on the west coast of Scotland, and throughout a great part of Queensland, New South Wales, and Victoria the rainfall averages about the same as at London. Hot winds blow occasionally from the north, bringing unpleasant clouds of fine dust. On the whole, the climate, except in the north, is healthy and suitable for Europeans. The seasons are the reverse of ours.

SURFACE

The mountains, as a rule, run near the coasts, the most important ranges being in the east and south-east. The interior of the eastern half of the continent consists of lowlands bounded by mountain ranges on the east and south-east. On the western half there is a low plateau, which descends by terraces to the sandy coast plains. A range of high ground seems to run from north to south across the continent; but a considerable part of the centre and west of Australia is still unexplored country.

RIVERS

There is only one river, the **Murray**, which is navigable for any distance throughout the whole year. Most of the streams dry up in summer. South Australia, as large as France and Germany together, has not a single river which could drive a mill of any size all the year round.

LAKES

Lakes and marshes, of great extent, are frequent in the interior during the rainy season, but nearly disappear in summer. Many of the lakes are salt.

NATURAL PRODUCTIONS

Vegetable—Low, impenetrable "scrub" covers the surface in many parts. Gum-trees, cedars, ferns, and palms are numerous. The *forests* of Australia are only inferior to those of Canada. *Wheat* is grown chiefly in Southern Australia, Victoria, and New Zealand; *vines* in Victoria and New South Wales; *sugar-cane*, *tobacco*, and *cotton* have been introduced in Queensland.

Animal—Cattle, sheep, and horses thrive throughout the greater part of Australia. The rabbit has become a pest, and its skin is an article of export. The camel has been successfully introduced in Western Australia.

Mineral—Gold, coal, copper, silver, iron, tin, lead.

MANUFACTURES

In the chief towns of the older settlements there are factories for the manufacture of **machinery**, **tallow**, **soap**, **woollen goods**, and **sugar**; while meat is preserved and exported in tins to Europe. Sydney, too, is famous for **ship-building**. But for textile fabrics, glass and metal goods, Australia is dependent chiefly on England.

There are comparatively few good roads in the country, but the number is steadily increasing. Oxen are used as draught animals. **Railways** are increasing rapidly, and Australia has already more than half the mileage of railways of the United Kingdom. The system of telegraphs, too, is very complete; and there is frequent and rapid steam communication between the different coast parts of the continent.

The **commerce** of Australia, which is very great, consists in **exporting raw materials** in exchange for the manufactured articles imported. Australia is one of the very best customers for British goods. The trade of the colonies is chiefly with Great Britain, with the other Australian colonies, Tasmania, and New Zealand, with Mauritius, Ceylon, and India, and with the United States.

Exports—Wool, grain, flour, cattle, tallow, preserved meat, hides, gold, copper ore.

Imports—Sugar, tea, coffee, tobacco, machinery and metal goods, leather goods, furniture, textile fabrics, and clothing.

TRADING PORTS

Sydney trades chiefly with America and Polynesia.

Melbourne } Trade chiefly with Europe
Adelaide } and Africa.

TASMANIA

This island is separated from Australia by Bass Strait, about 120 miles wide.

Area—26,300 square miles.

Population—170,000.

Climate—Mild and dry and very healthy, like that of the south of England but warmer.

SURFACE

Surface very mountainous, scenery grand. Soil in some parts very fertile.

Productions—Wheat, oats, potatoes, fruit, hops, and tobacco are chief crops. Great numbers of sheep in colony. Tin, coal, copper, and gold are found.

Exports—Copper, silver, wool, fruit, tin, timber, &c.

Imports—Chiefly clothes, hats, boots and shoes, machinery, and hardware.

Chief Port—*Hobart*, on the Derwent.

NEW ZEALAND

Consists of three islands—**North Island, South Island, Stewart Island.**

Area—104,000 square miles.

Population—over three-quarters of a million. There are besides 40,000 natives. These are called Maories.

Climate—very healthy. Winters milder than in England; summers warmer. Snow seldom seen. Seasons the reverse of ours.

SURFACE

The surface is **greatly diversified.** A range of mountains extends throughout the length of the islands. In the northern island there are volcanoes. The **mountains** run almost close to the **western shore,** which, as a rule, is high and rocky, with **fiords** resembling those of Norway. The islands are well watered, but the rivers are little more than mountain torrents on the western side. Those on the eastern side, though fine bodies of water, are bright and rapid and more like Scottish than English rivers.

ROADS

There are quite a large number of excellent roads, especially in the northern island, and about 2000 miles of railway.

CLIMATE

Moist and equable; oranges can be cultivated throughout the greater part of the northern island. The climate is exceedingly healthy and the soil fertile. Grapes ripen as far south as the middle of South Island.

Productions—Gold, coal, silver, kauri-gum, timber, wool, cattle, fruits, wheat, oats, turnips, and other English productions.

Exports—Wool, hides, tallow, timber, frozen mutton, gold, and kauri-gum.

Imports — Spirits, agricultural implements, clothing, furniture, weapons, glass.

Trading Ports—*Auckland* in North Island, *Dunedin*, *Lyttelton*.

BRITISH NEW GUINEA

British New Guinea—South-eastern part of island.

Area, about 90,000 square miles; **population,** under half a million.

Soil fertile. Climate fairly good for the latitude; seems favourable for tropical produce, rice, sugar, &c., and rubber-producing trees.

Imports — Food-stuffs, drapery, and hardware.

Exports—Copra, pearls, gold.

Chief Port—*Port Moresby.*

SOLOMON ISLANDS. Except Bougainville all these islands under British protection.

The population amounts to about 100,000.

Exports—Copra, ivory, and nuts.

FIJI ISLANDS

About 250 in number, of which *Viti Levu* and *Vanua Levu* are the largest. Population, over 120,000. The cocoa-nut and bread-fruit trees are natural to the islands.

Exports—Sugar, copra, fruit.

Imports — Hardware, drapery, bread-stuffs, machinery.

Port—*Suva.*

Besides the Fiji Islands there are in the Pacific many groups of islands and single islets belonging to Britain, such as the *Tonga* or *Friendly Islands*, *Cook's* or *Harvey Islands.*

These are mostly of coral formation.

Exports—Copra and fruit.

Imports—Drapery and hardware.

DOMINION OF CANADA

Boundaries—*North*: Arctic Ocean and Alaska. *East*: Atlantic Ocean. *South*: United States, Great Lakes, and St. Lawrence. *West*: Pacific Ocean.

Area—3,500,000 square miles.

Population—About 5,500,000.

SURFACE

Level or **rolling hill country** abundantly wooded in the eastern part of the Dominion. **Prairie** in the south-central parts, and **mountainous** and heavily wooded in the west. The two containing ranges of this highland region run north and south, the **Cascade** range near the west coast, and the **Rocky Mountains** rising from the prairies more to the east.

Rivers—St. Lawrence; *Chief Tributary*: The Ottawa. Red River; *Tributary*: The Assiniboine. Saskatchewan, Nelson River. Mackenzie River; *Chief Tributary*: Peace River. Frazer River, in Columbia.

Lakes—Ontario, Erie, Huron, Superior (32,000 square miles), Winnipeg, Athabasca, Great Slave Lake, Great Bear Lake.

Between Lake Erie and Lake Ontario are the famous Falls of Niagara.

In its great lakes and rivers Canada possesses a splendid system of waterways. The St. Lawrence and the Great Lakes form a natural **water highway** far into the heart of the country. This admits of great extension and improvement. Ocean steamers will, it is to be hoped, in the near future, load their wheat at ports on Lake Superior and unload at Liverpool or London.

CLIMATE

The climate of such a vast country as Canada is necessarily varied. In the Eastern, that is, the older settled parts, it is more extreme than that of Europe, but the climate is everywhere healthy, and suitable for the production of all the useful plants and fruits of the temperate belt. The climate of British Columbia in the west is like that of Europe. The soil is almost everywhere fertile.

PRODUCTIONS

Mineral—Rich in minerals, including coal, copper, tin, nickel, gold, silver, lead, and petroleum.

Vegetable—The *forests* are of immense extent and incalculable value. *Wheat*, *oats*, *barley*, and *fruit* are grown, but the quantities produced admit of indefinite increase. *Maize* and the *vine* are grown in Ontario.

Animal—*Beaver*, *sable*, *ermine*, *fox*, and other fur-bearing animals in the north and north-east. *Cattle* and *horses* are reared, and quantities of *butter* and *cheese* are produced. **Its fisheries** include *cod*, *salmon*, and *herring*.

Railways, &c. — Besides its splendid water-ways Canada has about 17,000 miles of railway.

The chief railways are the **Grand Trunk** and the **Canadian Pacific**, from which various branches are already being run to various parts of the, almost as yet, unopened west.

Imports—Textile manufactures, cotton, woollen, silk, linen, and jute. Sugar, tea, and coffee. Machinery, cutlery and tools, metal goods, leather, paper, books, and fancy goods. It imports chiefly from the United States, and the United Kingdom, and the West Indies.

Exports—Chiefly timber, grain, fruit, cattle, horses, cheese, beef, meat, furs, fish, hides, and oil. Its exports are sent chiefly to the United Kingdom, to the United States, Newfoundland, Australasia, and the West Indies.

Chief Ports—*Montreal*, *Quebec*, *Halifax*.

Chief Commercial Towns—*Montreal* and *Toronto*.

BRITISH WEST INDIES

Climate—Very hot, though tempered by trade-winds and sea-breezes. Tempests are frequent. Yellow fever dangerous to Europeans.

Trade—Chiefly with Great Britain, the United States, and amongst the islands themselves.

Exports—Sugar, rum, coffee, cocoa, dye-woods, fruits, spices.

Imports—Rice, flour, wine, oil, manufactured goods, machinery.

Divisions and Towns — (1) Bahama Islands, *Nassau*; (2) Jamaica, *Kingstown*; (3) Leeward Islands, *St. John's*; (4) Trinidad, *Port of Spain*; (5) Windward Islands; (6) Barbados, *Bridgetown*.

BRITISH HONDURAS

On East Coast of Central America

Exports — Mahogany, logwood, and sugar. *Capital*—Belize (6000).

BRITISH GUIANA

British Guiana includes the settlements of Demerara, Essequibo, and

Berbice, and lies on the north coast of South America.

Area—It has an area of 109,000 square miles, or only a little less than that of Great Britain and Ireland.

SURFACE

The coast is fringed by a belt of low land about 50 miles broad, the soil of which is exceedingly rich. Farther from the coast the country rapidly rises, and the scenery becomes bold and mountainous. Most of the mountains are covered with a virgin forest, but there are many fertile valleys and plains.

CLIMATE

The climate is hot and moist, but not felt to be oppressively so on the coast, and is quite as healthy as other tropical American countries.

Productions—Chiefly sugar and timber and gold.

Imports — Flour, rice, manufactured stuffs, machinery, coal, and hardware.

Exports—Sugar, rum, and rice.

Chief Port—*George Town* or *Demerara*.

UNITED STATES

THE UNITED STATES occupy the whole of the continent between Canada and the Gulf of Mexico.

Area (including Alaska)—over 3,500,000 square miles.

Population—nearly 80,000,000.

SURFACE

The **Mississippi valley** occupies fully half the area, and consists, especially on the west, of low undulating plains. On the east it is separated from the **Atlantic coast-plain** by the elevated tract known as the **Appalachian Mountains**. A **great plateau** separates it from the narrower **Pacific coast-plain**. This plateau has for its eastern border the **Rocky Mountains**, spurs of which cross the plateau, and for its western the **Sierra Nevada** and the **Cascade range**.

Rivers—Flowing into the *Gulf of Mexico*—Mississippi, Missouri; *Tributaries*—Yellowstone, Platte, Kansas, Ohio, Arkansas, Red River. Alabama, Colorado of Texas, Rio Grande. Flowing into the *Atlantic*—Hudson, Delaware, Susquehanna, Potomac, Savannah. Flowing into the *Pacific*—Columbia, Sacramento, Colorado.

Lakes — Superior, Michigan, Huron, Erie, Ontario, Champlain, Great Salt Lake.

In its great lakes and rivers the United States has an almost matchless system of waterways, and it has added to their utility by the construction of numerous canals. The chief of these are the **Erie Canal**, the **Pennsylvanian Canal**, the **Ohio Canal**, the **Lake Champlain Canal**, and the **Michigan Canal**.

CLIMATE

The climate is very different in different parts. The extreme north has the same mean annual temperature as the south of England, and the extreme south the same mean annual temperature as the northern part of Africa.

PRODUCTIONS

Mineral — The mineral wealth of the United States is very great, and unsurpassed by that of any other country. It includes *coal*, covering an area of more than 200,000 square miles; *iron*, found abundantly in Pennsylvania, Michigan, &c.; *copper* in Michigan and California; *lead* in Wisconsin and Missouri; *petroleum wells* in Pennsylvania and Ohio; *salt* in Michigan, New York, &c.; *gold* in the Pacific highland; *silver* in Colorado, Montana, Nevada, Idaho, and Utah; *quicksilver* in Kentucky.

Vegetable—The chief trees are: *pine, oak, elm, beech, birch, sugar-maple,* and *walnut.* Near the S.E. shores the *live oak, magnolia, cypress,* and *palmetto* flourish. The Pacific slope is clad with vast pine forests. The chief crops are: *maize, wheat, rye, oats, barley, buckwheat, rice, cotton, sugar-cane, tobacco, hemp, flax, hay, hops, potatoes, apples, pears, peaches, grapes, oranges, lemons.*

Animal—All the domestic animals of the Old World have been introduced. They include—*pigs,* chiefly in Ohio, Indiana, Iowa, Illinois; *sheep,* in Texas, California, and Ohio; *cattle,* on the prairies of Texas and other States, New York, and Ohio; *horses,* in Illinois, Iowa, Texas, and Kentucky; *mules,* in Kentucky.

MANUFACTURES

The chief manufacturing districts are in the north-east states, especially in New York, Pennsylvania, Massachusetts, New Hampshire, Ohio, and Michigan.

Iron-smelting, &c.—In Pennsylvania, Ohio, Michigan, Alabama. *Chief towns* —Pittsburg, Alleghany, Chicago, Cleveland, Youngston, Birmingham.

Hardware and Cutlery—Philadelphia, Chicago, New York, &c.

Machinery, Agricultural Implements, &c.—Philadelphia, Detroit, Chicago, Springfield, &c.

Textiles—*Cottons*: Fall River, Lowell, New Bedford, &c. *Woollens*: Worcester, Philadelphia, Lowell. *Clothing*: New York, Philadelphia, Chicago, &c.

Lumbering—Chiefly in Michigan, Wisconsin, and Minnesota. *Chief towns*: Minneapolis, Bay City, Saginaw.

Food-stuffs—*Meat packing*: Chicago, Kansas City, Omaha. *Flour milling*: Minneapolis, Chicago, Milwaukee, Detroit, &c. *Fruit preserving*: in the States of California, Delaware, &c.

Printing: New York, Philadelphia.

RAILWAYS

The total length of railways in the United States exceeds that of all Europe. It amounts to close on 190,000 miles. The first railway connecting **Atlantic and Pacific coasts** was finished in 1869. The journey of over 3000 miles takes five or six days.

The **Central Pacific Railway** connects New York with San Francisco by way of Omaha (Mo.) on the Missouri. Other lines connecting the Mississippi valley and Pacific Ocean have been made since 1869 north and south of the Central Pacific line.

Foreign Trade.

Great Britain surpasses the United States in the extent of its commerce. Half of the United States exports go to Great Britain. Only about one-fifth of the total is carried in American vessels; British vessels carry by far the greater part of the United States exports and imports.

Exports—*Raw materials*: cotton, petroleum, timber, copper, gold, silver, quicksilver. *Foods*: beef, pork, bacon, lard, cheese, cattle, corn and flour, sugar, rice, fruit, fish. *Manufactures*: cottons, leather, india-rubber, tobacco. skins and furs, iron and steel manufactures, clocks and watches.

Imports—Articles of European manufactures, especially woollen, silk, and linen goods; iron and steel goods; coffee and tea; furs and hides.

Chief Ports

On the Atlantic:

New York—at the mouth of the Hudson. More than half the imports of the United States pass through New York. Distance from Liverpool 3100 miles; time of transit six to eight days.

Boston — on Massachusetts Bay — the second port on the Atlantic.

Philadelphia—on the Delaware, in the S.E. corner of Pennsylvania, 90 miles from the sea. Exports timber, grain, iron, and petroleum.

Baltimore—in Maryland, near Chesapeake Bay, exports tobacco.

Charleston—on S. Carolina coast—grain, rice, cotton, tobacco, turpentine.

On the Gulf of Mexico:

New Orleans—in the Mississippi delta, exports the produce of the Mississippi valley.

Galveston—chief port in Texas—cotton, grain, cattle.

On the Pacific:

San Francisco—chief export town for the produce of the Pacific States.

INTERCHANGE OF COMMODITIES BETWEEN THE COLONIES AND THE UNITED STATES

British East Indies *send* to the **United States** rice, jute, tea, pepper, hides, and indigo; *receiving* thence machinery, cutlery, hardware, refined oil, and cotton goods.

Hong Kong *sends* to the **United States** tea, silk, hemp, &c.; *receiving* cottons, wheat and flour, machinery, cutlery, and hardware.

The **British Possessions in South Africa** *send* to the **United States** hides, feathers, wool, and precious stones; and *receive* from the United States, mineral oils, machinery, timber, and textiles.

The **British Possessions in Australasia** *send* to the **United States** wool, hides, fruit; and *receive* timber, flour, machinery, and manufactured goods.

British North America *sends* to the **United States** logs, lumber, wood in various forms, fish of all kinds, lobsters, hides, furs, hay, grain, fruit, animals, eggs, &c.; and *receives* coal, cotton, iron and steel manufactures, textiles, paper, drugs and chemicals, earthenware, tobacco for manufacture.

Newfoundland *sends* to the **United States** dried cod and iron ore, and *receives* flour and manufactured goods.

The **British West Indies and Guiana** *send* to the **United States** sugar, cocoa, coffee, spices, &c.; and *receive* wheat and flour, manufactured goods, staves for sugar barrels, &c.

SOME COMMODITIES OF COMMERCE

FOOD-STUFFS, WINES, TOBACCO, &c.

Wheat and Flour

Exporting—United States, British India, British North America, Australasia (South Australia, Victoria), Cyprus, Argentina.

Importing—The United Kingdom, Ceylon, Queensland, New South Wales, Western Australia, Natal, Cape Colony, Mauritius, Newfoundland, The West Indies, Guiana, Cuba, Porto Rico, Hawaii.

Barley

Exporting—United States, Canada, New Zealand.

Importing—The United Kingdom.

Oats

Exporting—The United States, Canada, New Zealand, Victoria, Tasmania.

Importing—The United Kingdom, New South Wales, Victoria.

Maize

Exporting—The United States, Canada, Natal.

Importing—The United Kingdom, Cape Colony, Egypt, The West Indies (Indian-corn meal).

Rice

Exporting—India, including Burma, the United States.

Importing—The United Kingdom, Ceylon, The Straits Settlements, Bahrein Islands, Mauritius, Egypt, The West Indies.

Sago

Exporting—The Straits Settlements.

Importing—The United Kingdom.

Potatoes

Exporting — New Zealand, Tasmania, Canada, The United States.

Importing—Newfoundland, New South Wales.

Fruit

Exporting—Australasia (Victoria, New Zealand, Tasmania), The United States, Canada, The West Indies.

Importing—The United Kingdom, The United States, New South Wales, Victoria.

Nuts and Kernels

Exporting—Sierra Leone, Lagos, Nigeria, British East Africa, Zanzibar, East Indies, Hong Kong, New South Wales.

Importing—The United Kingdom, The United States.

Ginger and Spices

Exporting—East Indies, Straits Settlements, Ceylon, India, West Indies, Sierra Leone.

Importing—The United Kingdon, United States, Canada, South Africa, Australasia.

Sugar

Exporting—The West Indies, Mauritius, British India, Cuba, Fiji Islands, Hawaii, Guiana, Queensland, Porto Rico, Natal, British New Guinea.

Importing—The United Kingdom, The United States, Canada, Victoria, New South Wales, Western Australia, Tasmania, New Zealand, Ceylon.

Biscuit and Bread

Exporting—The United Kingdom.

Importing—Egypt, West Africa, South Africa, British East Indies, Channel Islands.

Tea

Exporting—India, Ceylon, Hong Kong.

Importing—The United Kingdom, The United States, Canada, Australia, New Zealand, South Africa, Newfoundland.

Coffee

Exporting—India, Ceylon, Cuba, Aden, Porto Rico, Bahrein Islands, Hawaii, British Central Africa Protectorate, Jamaica.

Importing—The United Kingdom, The United States, Canada, South Africa.

Cocoa

Exporting—Trinidad, Ceylon, &c.

Importing—The United Kingdom, &c.

Rum

Exporting—Jamaica, Trinidad, British Guiana.

Importing—Gold Coast, Lagos, Sierra Leone, The United Kingdom.

Whisky

Exporting—Scotland and Ireland.

Importing—South Africa, Australasia, Ceylon, India.

Beer and Ale

Exporting—England and Ireland.

Importing—South Africa, Australasia, British East Indies, British West Indies, Malta, Egypt, United States, Canada, and Newfoundland.

Drugs

Exporting—British East Indies, Hong Kong, Ceylon, Australasia, British West Indies.

Importing—The United Kingdom, The United States.

Animals for Food

Exporting—Canada, Newfoundland, The United States, Argentina.

Importing—The United Kingdom.

Dead Meat of all kinds, including Bacon and Ham

Exporting—The United States, New South Wales, Queensland, Victoria, New Zealand, Canada, Newfoundland.

Importing—The United Kingdom, Newfoundland, The West India Islands, British Guiana.

Pickles

Exporting—The United Kingdom.

Importing—The United States, Egypt, and British Colonies.

Butter

Exporting—The United States, Canada, New South Wales, Victoria, Queensland, New Zealand.

Importing—The United Kingdom, Newfoundland, The West Indies, British Guiana.

Cheese

Exporting—Canada, The United States, New Zealand, Victoria, Newfoundland.

Importing—The United Kingdom, West Indies, British West Africa.

Condensed Milk

Exporting—The United States, Victoria, East Indies, British West Indies, Canada.

Importing—The United Kingdom.

Eggs

Exporting—Canada, The United States, The Channel Islands.

Importing—The United Kingdom.

Fish

Exporting—Canada, Newfoundland, Great Britain.

Importing—The United States, The West Indies, Ceylon, Australasia.

The fish are imported fresh, or tinned, or pickled, or dried.

Tobacco

Exporting—The United States, Cuba, Porto Rico, Fiji Islands, Philippines, British North Borneo, Burma, Straits Settlements.

Importing—The United Kingdom, Canada, South Africa, Australasia, Ceylon, Newfoundland.

Hay

Exporting—Canada, South Australia, Victoria.

Importing — The United Kingdom, Western Australia, New South Wales.

Seeds

Exporting—India, The United States.
Importing—The United Kingdom, Australasia.

Oil-cake and Oil-meal

Exporting—The United States.
Importing—The United Kingdom.

RAW MATERIALS

Coal

Exporting—The United Kingdom, The United States, Natal, New South Wales, Canada, British Borneo.
Importing — Gibraltar, Malta, Cyprus, Egypt, India, British West Africa, British East Africa, The West Indies, Newfoundland, Victoria, Hong Kong, India, Cape Colony.

Clay

Exporting—The United Kingdom.
Importing—The United States, Canada, British East Indies.

Oil (Petroleum)

Exporting—The United States, Canada.
Importing—The United Kingdom, India, Ceylon, Cape Colony, Queensland, New Zealand.

Oils (Animal)

Exporting—Newfoundland, The United States, Tasmania.
Importing—The United Kingdom.

Oils (Vegetable)

Exporting — India, Ceylon, Australasia, Sierra Leone, Lagos, Nigeria.
Importing—The United Kingdom, South Africa, Australia, New Zealand.

Iron Ore

Exporting—New South Wales, Canada, Newfoundland, *Spain*.
Importing—The United Kingdom.

Copper Ore

Exporting—South Africa, Newfoundland, Canada, West Australia, South Australia, Queensland, Tasmania, New South Wales, Cuba, The United States.
Importing—The United Kingdom, The United States.

Tin

Exporting — The Straits Settlements, Victoria, New South Wales, Tasmania, Queensland, India.
Importing—The United Kingdom, The United States.

Lead

Exporting — South Australia, Victoria, New South Wales, New Zealand (both ore and pig), The United States (pig and sheet).
Importing—The United Kingdom.

Zinc

Exporting — Australasia, Canada, The United States.
Importing—The United Kingdom.

Nickel

Exporting—Canada.
Importing—The United Kingdom, The United States.

Silver Ore

Exporting—South Australia, New South Wales, Queensland, The United States.
Importing—The United Kingdom.

Plumbago

Exporting—Ceylon, Madras.
Importing—The United Kingdom.

Pitch

Exporting—Trinidad.
Importing—The United Kingdom.

Raw Cotton

Exporting—The United States, Egypt, Bombay, Madras, Straits Settlements, British West India Islands.
Importing — The United Kingdom, Canada.

Jute

Exporting — India (almost entirely Bengal).
Importing—The United Kingdom, The United States.

Flax

Exporting—*Russia*.
Importing—The United Kingdom.

Hemp

Exporting—The Philippine Islands, Hong Kong, British East Indies, Straits Settlements, New Zealand.
Importing—The United Kingdom, The United States.

Coir

Exporting—India, Ceylon.
Importing—The United Kingdom.

Silk

Exporting—The British East Indies and Hong Kong.
Importing—The United Kingdom, The United States.

Wool

Exporting—New South Wales, Queensland, Victoria, South Australia, Western Australia, Tasmania, New Zealand, Cape Colony, Natal, British East Indies, Falkland Islands.
Importing—The United Kingdom, The United States.

Hair

Exporting—Australasia, Canada.
Importing—The United Kingdom.

Feathers, Beds, &c.

Exporting—Hong Kong.
Importing—The United Kingdom.

Dye-stuffs and Substances used in Tanning

Exporting—Natal, South Australia, New Zealand, British East Indies, The Straits Settlements, Ceylon, Cape Colony, Zanzibar, Hong Kong.
Importing—The United Kingdom, The United States.

Chemicals and Bleaching Materials

Exporting—The United Kingdom.
Importing—The United States, South Africa, British East Indies, Australasia, Canada, British West Indies.

Soap

Exporting—The United Kingdom.
Importing—Canada, South Africa, Australasia, British East Indies, British West Indies, &c.

Dye-woods—Logwood, &c.

Exporting — British Honduras, The British West Indies, The British East Indies, Sierra Leone.
Importing—The United Kingdom, The United States.

India-rubber

Exporting—Gambia, Sierra Leone, The Gold Coast, Lagos, Nigeria, Zanzibar, British East Africa, British Indies, Burma, The Straits Settlements, Australasia.
Importing—The United Kingdom, The United States.

Gutta-percha

Exporting—Straits Settlements, British Guiana, The West Indies.
Importing—The United Kingdom.

Gums of Various Kinds

Exporting—British East Indies, Aden, Nigeria, New South Wales, New Zealand, West Coast of Africa, Straits Settlements, Hong Kong.
Importing—The United Kingdom, The United States.

Hides

Exporting—British West Africa, British South Africa, British East Indies, The Straits Settlements, Egypt, New South Wales, Queensland, The Channel Islands, The West Indies, Falkland Islands, Canada.
Importing—The United Kingdom, The United States.

Horns, Hoofs

Exporting—Cape Colony, Natal, British India, Ceylon, Straits Settlements, Australasia, Egypt.
Importing — The United Kingdom, Canada.

Skins (Goat) Undressed

Exporting—South Africa, Aden, Egypt, The Straits Settlements, The British East Indies.

Importing—The United Kingdom.

Skins (Sheep) Undressed

Exporting—South Africa, Aden, Australasia, Egypt.

Importing—The United Kingdom.

Furs, Rabbit Skins

Exporting — South Australia, Victoria, New South Wales, Queensland, Tasmania, New Zealand.

Importing—The United Kingdom.

Seal Skins

Exporting—The United States, Canada, Newfoundland.

Importing—The United Kingdom.

Furs of Other Kinds

Exporting—The United States, Canada, Victoria, New South Wales, The British East Indies.

Importing—The United Kingdom.

Ivory

Exporting — Zanzibar, Aden, Somali Coast, British East Africa, Nigeria, Sierra Leone, Gold Coast, Malta, British East Indies.

Importing—The United Kingdom, The United States.

Rags for Paper Making

Exporting—Egypt, The Channel Islands, Australasia, The United States.

Importing—The United Kingdom.

Wood Pulp

Exporting—Canada.

Importing—The United Kingdom, The United States.

Timber

Exporting—Canada, The United States, Burma, Cuba, Porto Rico, the Gold Coast, British Honduras, British Guiana, the British West Indies, Western Australia.

Importing—The United Kingdom, The United States.

Woollen Rags for Shoddy

Exporting—Channel Isles, Australasia, British East Indies.

Importing—The United Kingdom.

MANUFACTURED ARTICLES

Pig-iron

Exporting—The United Kingdom, The United States.

Importing—The British East Indies, Hong Kong, Australasia, Canada, South Africa.

Iron Bars

Exporting—The United Kingdom and The United States.

Importing — South Africa, India, The Straits Settlements, Philippine Islands, Hong Kong, Australasia, Canada, The West Indies.

Rails, &c.

Exporting—The United Kingdom, The United States.

Importing—West Africa, South Africa, East Africa, Egypt, British India, The Straits Settlements, Australasia, Canada, Newfoundland, British Guiana.

Steel and Iron (galvanized), &c.

Exporting—The United Kingdom.

Importing — West Africa, East Africa, South Africa, Egypt, British India, Ceylon, Straits Settlements, Hong Kong, Australasia, Canada, The West Indies, Guiana.

Tin-plate and Sheets, &c.

Exporting—The United Kingdom.

Importing—The United States, Egypt, South Africa, British East Indies, Philippine Islands, Australia, New Zealand.

Agricultural Implements and Tools

Exporting—The United Kingdom, The United States.

Importing—Cuba, Porto Rico, The Philippine Islands, and all the British colonies.

Surgical Instruments

Exporting—The United Kingdom.
Importing—The United States, The Philippine Islands, West African Colonies, South Africa, Australasia, Canada, The West Indies.

Cutlery and Hardware

Exporting—The United Kingdom.
Importing—The United States, Canada, Newfoundland, The West Indies, British Guiana, Honduras, Egypt, South Africa, East Africa, West Africa, Mauritius, Aden, British India, Hong Kong, Straits Settlements, Ceylon, Australasia.

Machinery (Locomotives and Agricultural)

Exporting—The United Kingdom, The United States.
Importing—South Africa, Egypt, British East Indies, Australasia, West Indies, Canada, Cuba, Porto Rico, Philippine Islands.

Sewing-machines

Exporting—The United Kingdom, the United States.
Importing—South Africa, British East Indies, Australasia.

Mining Machinery

Exporting—The United Kingdom.
Importing—South Africa, India, Australasia, British Guinea.

Textile Machinery

Exporting—The United Kingdom.
Importing—The United States, Egypt, British India, Hong Kong, Australasia, Canada.

Railway Carriages

Exporting—The United Kingdom.
Importing—Egypt, British South Africa, Australasia.

Cycles

Exporting—The United Kingdom, The United States.
Importing—Egypt, The Channel Islands, Malta, South Africa, British India, Ceylon, the Straits Settlements, Australasia, Canada.

Copper Manufactures

Exporting—The United Kingdom.
Importing—British East Indies, Australasia, Canada, British West Indies.

Brass Manufactures

Exporting—The United Kingdom.
Importing—West Africa, South Africa, Mauritius, British India, Australasia, Canada, The West Indies.

Telegraphic Wires and Appliances

Exporting—The United Kingdom.
Importing—Egypt, East Africa, South Africa, Zanzibar, Malta, West Africa, Aden, British East Indies, Straits Settlements, Australasia, Canada, Newfoundland.

Glass and Earthenware

Exporting—The United Kingdom.
Importing—The United States, Egypt, South Africa, British East Indies, the Philippine Islands, Australasia, Canada, the West Indies.

Cottons

Exporting—The United Kingdom, The United States.
Importing—Gibraltar, Malta, Cyprus, Egypt, British East Africa, Zanzibar, Sierra Leone, The Gold Coast, Lagos, Nigeria, South Africa, Central Africa Protectorate, Mauritius, British East Indies, Straits Settlements, Ceylon, British Borneo, Hong Kong, Philippine Islands, Australasia, Canada, Newfoundland, British West Indies, Cuba, Porto Rico, Honduras, and British Guinea.

Cotton Thread for Sewing

Exporting—The United Kingdom.
Importing—The United States, Egypt, The Philippine Islands, The Channel Islands, British West Africa, British South Africa, British East Africa, Zanzibar, British East Indies, Austral-

asia, Canada, The West Indies, Honduras, and British Guinea.

Woollens, and Worsted Manufactures and Hosiery

Exporting—The United Kingdom.
Importing—The United States, Egypt, The Philippine Islands, Cuba, Porto Rico, and the British Colonies.

Linen

Exporting—The United Kingdom.
Importing—The United States, Egypt, The British East Indies, Australasia, Canada, The British West Indies.

Silk Manufactures

Exporting—The United Kingdom.
Importing—The United States, British West Africa, British South Africa, British East Indies, Australasia, and Canada.

Note.—The United Kingdom imports much more silk than it exports.

Jute Manufactures

Exporting—The United Kingdom, India.
Importing—The United States, Argentine Republic, Australasia, Canada.

Apparel

Exporting—The United Kingdom.
Importing—The Channel Islands, Gibraltar, Malta, Cyprus, Egypt, Gambia, Sierra Leone, The Gold Coast, Lagos, Nigeria, South Africa, East Africa, Zanzibar, Aden, British East Indies, Hong Kong, Australasia, Canada, Newfoundland, The British West Indies, Honduras, British Guiana, Falkland Islands.

Leather

Exporting—The United Kingdom, The United States, Canada.
Importing—Egypt, South Africa, British East Indies, Australasia, British West Indies, British Guiana.

Skins and Furs (dressed)

Exporting—The United Kingdom.
Importing—The United States and Canada.

Boots and Shoes

Exporting—The United Kingdom.
Importing—Egypt, West Africa, South Africa, British East Indies, Australasia, British West Indies, British Guiana.

Hats

Exporting—The United Kingdom.
Importing—Egypt, West Africa, South Africa, British East Indies, Australasia, Canada, British West Indies, Honduras, British Guiana.

Umbrellas and Parasols

Exporting—The United Kingdom.
Importing—West Africa, South Africa, British East Indies, Australasia, Canada, British West Indies, British Guiana.

Millinery and Haberdashery

Exporting—The United Kingdom.
Importing—Egypt, The United States, The Channel Islands, Gibraltar, Malta, West Africa, St. Helena, South Africa, Mauritius, British East Indies, Australasia, Canada, Newfoundland, British West Indies, Honduras, British Guiana. Falkland Islands.

Oil and Floor Cloth, including India-rubber cloth

Exporting—The United Kingdom.
Importing—The United States, Egypt, The Channel Islands, South Africa, British East Indies, Australasia, Canada, Newfoundland.

Books and Stationery

Exporting—The United Kingdom.
Importing—The United States, Egypt, The Channel Islands, Gibraltar, Malta, Cyprus, West Africa, St. Helena, East Africa, Mauritius, British East Indies, Australasia, Canada, Newfoundland, British West Indies, British Guiana.

Furniture

Exporting—The United Kingdom, Canada, The United States.

Importing—Chiefly South Africa, British East Indies, and Australasia.

THE PRECIOUS METALS

Gold

Exporting — Australasia, South Africa, The United States, India, Canada, West Africa.
Importing — The United Kingdom and her Colonies.

Silver

Exporting — The United States, South Australia, New South Wales.
Importing—The United Kingdom.

DIAMONDS

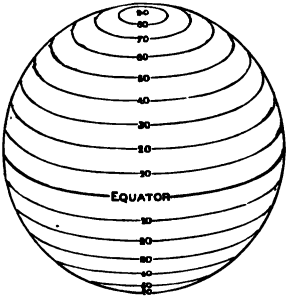
Diamonds

Exporting—South Africa.
Importing — The United Kingdom, The United States.

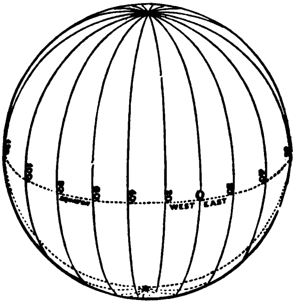
ON LATITUDE AND LONGITUDE

PARALLELS OF LATITUDE.—If we were asked to point out upon a map a place we did not know, we might, without other aid, hunt all over the earth for a week and never find it.

If we knew that the place sought for was situated on the equator, we should only have to follow that line carefully round the world until we came to the name.



Globe, with Parallels of Latitude.



Globe, with Lines of Longitude.

If, therefore, there were several other imaginary lines drawn round the globe, each one named or numbered to distinguish it, they would help us in exactly the same way. This is just what makers of maps have done. They have supposed the earth to be surrounded by a number of lines like the equator, running **east** and **west** and dividing the earth into rings or bands, each representing a degree. Of these there are **180** in all, **90 north** of the equator and **90 south** of it.

The equator itself counts as zero (0); the first ring above it marks one degree north; the second ring above the equator marks two degrees north; and so on, through the whole ninety. As we leave the equator, each circle is smaller than the last until we come to ninety degrees north, which is the North Pole.

In the same way we may journey south of the equator. The first ring below it marks one degree south; the second ring below the equator marks two degrees south; the third, three degrees south; and so on till we reach ninety degrees south at the South Pole.

These imaginary lines drawn round the earth from east to west are known as **Parallels of Latitude.** The distance of any place north or south of the equator is called its **Latitude.** In small maps or globes it is not possible to give a circle for each degree, and it is usual in such cases to mark every tenth circle only.

A degree of Latitude is about **69 ordinary miles,** or **60 geographical miles,** or, as sailors call them, **knots.** Now it will be quite clear that if a town is 90 geographical miles from the equator, it will lie just half-way between the line marking the first degree and the line marking the second degree. How are we to describe its latitude?

Globe, with both Latitude and Longitude, showing Eastern Hemisphere.

To meet cases of this kind, a **degree,** like an hour, is divided into **60 minutes,** each minute being again divided into **60 seconds.**

Thus the latitude of Venice is 45 degrees 30 minutes north, or just half-way between the lines marking 45 degrees and 46 degrees north of the equator. Degrees are shortly marked by the sign °, minutes by ′, and seconds by ″. Thus 25° 4′ 18″ is to be read 25 degrees, 4 minutes, 18 seconds.

MERIDIANS OF LONGITUDE.—If we look at a globe or map we shall find a number of lines running from **north** to **south,** crossing the equator at regular intervals, and dividing it into **360 degrees.** By means of these we shall find ourselves able to reckon distances east and west, just as we were enabled by the parallels of latitude to reckon distances north and south of the equator.

We notice at once, however, certain points of difference between these lines of longitude, as they are called, and the parallels of latitude. In the first place, they are not parallel, but spring, like the spokes of a wheel, from the north and south poles; in the second place, they are all of the same size.

Now, in numbering the lines of latitude it was natural to start from the equator, because it was the biggest circle of all and divided the world into two equal parts—the northern and southern hemispheres. But in the circles formed by the lines of longitude no one is greater than another, and each one would equally well divide the world into hemispheres. It is necessary to fix upon a special line as a starting-point from which to reckon the distances east and west. The English reckon east and west from the line which passes north and south through **Greenwich** observatory; the French reckon east and west from the line which passes north and south through **Paris.**

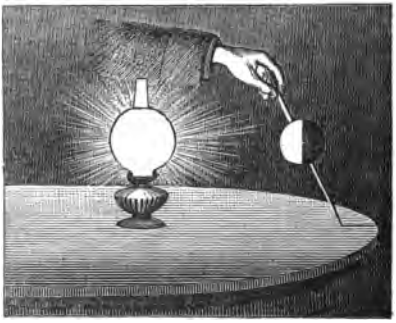
Lines of longitude are called **Meridians of Longitude,** because, as they run due north and south, all the places on any one line have their noon, mid-day, or meridian, at the same moment.

If, then, we take the meridian of longitude passing through Greenwich as our starting-point, we shall describe places as one, two, or one hundred degrees east or west, according to their position to the left or right of it. Degrees of longitude count up to 180°, the line marking 180° being exactly opposite to the line marking 0° at Greenwich, so that when it is mid-day in places with longitude 0° it is midnight in places with longitude 180°.

We may now see how, by taking the parallels of latitude and the meridians of longitude together, we may find any place without long search.

DAY AND NIGHT.—Although we always speak of the sun and stars as rising and setting, and as moving across the sky from east to west, yet we know that it is not the sun but the earth which moves.

The Earth's Two Motions.—If we watch two people waltzing we notice that they not only turn round and round together, but at the same time move round the room in which they are dancing. In the same way a top while it is spinning will often move round in a circle until it settles down and becomes sleepy. These two motions are almost the same as those of the earth. It spins or turns round as the top and the dancers do, and at the same time it is sweeping in a great circle, or almost a circle, round the sun. We must look at these separately for a little, because it is the first of these motions which causes day and night, and the second which is in part the cause of the changes of the seasons.



Lamp and Ball.

The Earth's Daily Motion.—The motion of the earth which causes day and night may be illustrated by the following experiment:—Take a globe or ball to represent the earth, and through the centre of it thrust a knitting-needle. The knitting-needle is to represent the axis of the earth —an axis being the straight line passing through a body on which it revolves, or may be supposed to revolve. A lighted candle or lamp will serve for the sun. Place the lamp near the centre of a round or oval table, and hold the ball above the table-edge; the rays light up one-half the ball and leave the other half in darkness. In the same way the sun lights one-half the world while in the other half there is night.

Let the wire, which represents the earth's axis, be held vertically or nearly so, and turn the ball on its axis so that its surface moves in the direction from west to east. The rays of the lamp extend onwards from east to west, just as the sun appears to rise and to journey westwards, carrying light with it, and leaving darkness behind it.

Mark on the surface of the ball a meridian line farthest from the light; this will represent midnight upon a corresponding meridian of the earth's surface. Let the ball rotate half round, and that meridian is now nearest to the sun, representing noonday upon the earth. Another half brings the meridian back to midnight, and a day has been completed.

The earth turns completely round **on its axis,** or rotates, **once in 24 hours,** and thus causes day and night.

Longitude and Time.—We have already seen that the earth's surface is divided into 360 degrees. If, then, the sun appears to move round the whole earth in 24 hours, it will appear to move over 15 degrees every hour, because 24 times 15 is 360. We may, if we like, put it another way, and say that every place on the earth's surface turns through 15 degrees every hour.

This means that people who are 15 degrees east of the town in which we are will see the sun an hour before we do, and will be an hour earlier than we are all through the day. Thus, at Vienna, Naples, and Mount Etna, which are on the 15th meridian east of Greenwich, the sun rises and sets an hour earlier than at places on the Greenwich meridian. New York, on the other hand, which is 75 degrees west of Greenwich, does not see the sun until five hours after it has been seen at Greenwich.

If the sun appears to move through 15 degrees in 60 minutes, it follows that it will appear to move through one degree in four minutes. Every degree of longitude, therefore, makes a difference of four minutes in the time, time being earlier for places more to the eastward and later for those more to the westward.

In **England** it is the custom to keep **Greenwich time** everywhere for convenience; in **Ireland, Dublin time** is kept. Dublin time is 25 minutes later than Greenwich time, because it is 6° 15′ to the west. Liverpool is 3° w., and the public clocks set by Greenwich time are therefore 12 minutes faster than the true time.

Just as difference of time may be reckoned from longitude, so may longitude be reckoned from difference of time. Every sea-going ship carries a chronometer, a kind of large watch of extreme accuracy, which is set to Greenwich time. The captain can tell the true time at any particular place by observing the position of the sun, and he calculates difference of longitude as equal to 1° for every four minutes of time. Thus if it is noon by the sun and 40 minutes past 12 o'clock by the chronometer, the captain knows that at the place where he is the time is 40 minutes later than that of Greenwich. Now every 4 minutes represents a degree of longitude, so that the captain knows that he is exactly 10 degrees west of the Greenwich meridian. The latitude having been found by observations on the sun or the stars, he can mark on his chart the exact position of his ship.

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